**"There should be some kind of a deeper meaning for English language in classes as well" –
Examination of Finnish upper secondary school students' views on applying video games in
English language education from sociocultural and ecological perspectives**

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Abstract

The purpose of this master's thesis is to examine how contemporary sociocultural and ecological learning theories that are applied in the National Core Curriculum support the use of video games in language learning and teaching and how students themselves perceive language learning and the role of video games in their learning process. Moreover, this study focuses on examining how the use of video games in language learning, and video game *Detroit: Become Human* in particular, can promote students' learning process and more specifically, what kinds of affordances playing video games can offer for students who participate in this kind of action. The method applied in this study is qualitative content analysis. The data for this study was gathered from a learning experiment that consisted of a gaming session and interview with a small group of upper secondary school students. That is, research materials were game *Detroit: Become Human*, film recordings from the gaming session and an audio recording from the interview. The analysis of the data revealed that students value personal motivation and meaningful learning that steers away from textbooks and written exams. Furthermore, it appeared that playing video games in class promotes students' learning process by providing an engaging and interactive environment for cross-curricular learning. Thus, affordances that arise from this kind of environment offer students a learning environment that evokes various emotions and reflections among them and encourages discussion among peers.

Tiivistelmä

Tämän pro gradu -tutkielman tarkoituksena on tarkastella, miten tämänhetkiset sosiokulttuurinen ja ekologinen oppimisteoria, joihin valtakunnallinen opetussuunnitelma pohjautuu, tukevat videopelien käyttöä oppimisessa ja opetuksessa, sekä sitä, millainen käsitys opiskelijoilla on kielenoppimisesta ja videopelien roolista oppimisprosessissa. Lisäksi tutkimus tarkastelee, kuinka videopelit ja etenkin peli *Detroit: Become Human* voivat edistää opiskelijoiden oppimista sekä erityisesti, millaisia affordansseja videopelien pelaaminen tarjoaa opiskelijoille, jotka osallistuvat tällaiseen toimintaan. Tutkimusmetodina käytetään kvalitatiivista sisällönanalyysia. Tutkimusdata kerättiin opetuskokeilusta, joka sisälsi pelituokion ja haastattelun lukiolaisten pienryhmän kanssa. Tutkimusmateriaalia olivat peli *Detroit: Become Human*, videotallenteet pelituokiosta sekä äänitallenne haastattelusta. Tutkimusaineiston analyysi paljasti, että opiskelijat arvostavat henkilökohtaista motivaatiota ja merkityksellistä oppimista, joka suuntautuu poispäin oppikirjoista ja kirjallisista kokeista. Lisäksi selvisi, että videopelien pelaaminen koulussa edistää opiskelijoiden oppimisprosessia tarjoamalla osallistavan ja vuorovaikutuksellisen ympäristön oppiainerajat ylittävälle oppimiselle. Tällaisesta ympäristöstä esiin nousevat affordanssit tarjoavat opiskelijoille oppimisympäristön, joka herättää pelaajissa monenlaisia tunteita ja pohdintoja ja kannustaa keskusteluun muiden kanssa.

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1 Introduction

In recent years, technological developments have had a significant impact in school environments in Finland. While traditional learning and teaching methods and materials such as books and notebooks are still used, more modern and electronic alternatives such as smart boards, online applications and e-books are starting to replace them. Therefore, it is important for teachers to be aware of these technological developments and possibilities and consider how to apply them to their teaching. As a future teacher, I am personally very interested in using modern technology and Internet in my teaching. Also, playing video games is one of my personal interests, so for this master's thesis study, those two interests will be combined so that the potential of using video games in English language learning and teaching will be studied.

In addition to technological changes and developments, also views on language learning have changed. Before, the goal of language teaching was to teach different aspects of language, for example grammar and pronunciation, so that pupils and students could communicate accurately and flawlessly in a foreign language with other people. However, today's sociocultural and ecological views on language learning and teaching that are applied in the National Core Curriculum suggest that the goal of language learning is to be able to interact with people from different cultures in various situations, where successful communication and interaction is more important than perfect grammatical knowledge or native-like pronunciation. Moreover, these learning theories suggest that learners need to be active for learning to happen, and one could argue that playing video games puts a learner in an active role. Therefore, this thesis focuses on studying the possibilities of using video games in language education from sociocultural and ecological perspectives. Moreover, through the examination of previous research on game studies, this thesis reflects on how the use of video games can help in providing students with a motivating and meaningful learning environment, in which they can participate in an authentic and engaging study session that promotes their learning process.

As a part of this study, a learning experiment session was conducted for upper secondary school students with a goal to experiment how the use of video games in English language learning works in practice. Students were also interviewed on the topic, as their views and opinions are important in this kind of study. All in all, the goal of this master's thesis is to examine how ecological and sociocultural learning theories support using video games in language learning and teaching and how students themselves perceive language learning and the role of video games in their learning process.

Another purpose of this thesis is to study how video games, especially game *Detroit: Become Human*, can promote students' learning process and what kinds of affordances playing *Detroit: Become Human* and other video games can offer to players.

In section two, the theoretical and methodological framework including language learning theories and their application in the Finnish national curriculum, previous use of video games in language learning as well as different kinds of video games and their suitability to language learning will be presented and discussed. In section three, data collection methods and approach of this study will be introduced. Section four consists of the analysis of the data, and it is followed by the final discussion and conclusion in section five.

2 Theoretical and methodological framework

In this section, contemporary language learning theories will be presented and their relevance to my study considered. Moreover, the application of these views on learning in the Finnish national curriculum will be discussed. After that, previous studies on using video games in language learning and teaching as well as different kinds of video games and their suitability to language learning from a sociocultural and ecological view will be presented and discussed.

2.1 Contemporary language learning theories

In this subsection, sociocultural and ecological views on language learning as well as situated learning will be presented and discussed. These views on learning are important for this study, because the Finnish national curriculum is based on those learning theories and therefore the currently relevant pedagogical methods and tools used in Finland follow the views of sociocultural, ecological and situated learning theories.

2.1.1 Sociocultural theory

The origins of sociocultural views on learning originate from the Russian psychologist Lev Vygotsky (1896-1934), because his work on the field of human and child development, language, education, pedagogy and psychology led to new approaches to human understanding (Liem, Walker & McInerney, 2011, p. 4). Vygotsky's ideas influenced for example understanding of the relationship between language and thought as well as understanding of learning being a social phenomenon (Liem, Walker & McInerney, 2011, p. 4).

The views on language learning and learning in general have shifted from viewing it as an isolated and individual phenomenon to considering it as "inherently embedded in and shaped by situated social interactions" (Hawkins, 2004, p. 3). According to Liem, Walker & McInerney (2011, p. 11) socioculturalism is a philosophical approach to understanding how people learn and behave in social contexts. Therefore, the sociocultural theory studies how individual, social and contextual issues impact human activity, for example learning (Liem, Walker & McInerney, 2011, p. 12). The complexity in the social world impacts human behaviour and thought, and therefore it is essential to

understand and study the situated context in which the phenomenon occurs (Liem, Walker & McInerney, 2011, p. 12). In education, people are situated within various organisational, social and cultural groups, and these environments combined with a learner's internal processes impact their motivation and affect their cognitive growth and actions (Liem, Walker & McInerney, 2011, p. 16).

Hawkins (2004, p. 3) suggests that from a sociocultural view, languages (e.g. English) need not be viewed as a general entity but they are rather composed of various social languages. Social language refers to "different styles of language that communicate different socially-situated identities (who is acting) and socially-situated activities (what is being done)" (Hawkins, 2004, p. 3). Gee (2004, p. 13, as cited in Gee, 1996, 1999a) supports Hawkins's views and suggests that people do not learn languages like English or Russian, but that they rather learn one of many different varieties of English, which are called social languages. Social languages refer to different types of uses of language in different social situations with different people, for example word choices and grammar used in school or with friends (Gee, 2004, p. 16). These different socially situated activities allow a person to make different versions of themselves, which are called socially situated identities (Gee, 2004, p. 17).

Blommaert and Rampton (2011) take this idea further by introducing a concept 'super-diversity'. According to Blommaert & Rampton (2011, pp. 3–4), distinct languages do not exist, but they are only named 'English', 'German' etc. because they are ideological constructions based on emergence of nations in the 19th century. Today, globalisation and multicultural environments as a result of increased migration have altered the face of linguistic, social and cultural diversity in societies gradually leading to shifts in the study of language in society (Blommaert & Rampton, 2011, pp. 1–2). Instead of considering notions like 'native speaker' and 'mother tongue', it is more important to study how people take on different linguistic forms when interacting with different groups in different environments (Blommaert & Rampton, 2011, p. 5). The approach emphasises situated action considering linguistic conventions and structures as one semiotic resource among several others that are "available to participants in the process of local language production and interpretation" (Blommaert & Rampton, 2011, p. 5). When communicating with others, people can switch their talk into a different style or register, and this overlap emerges from their previous social experiences and exposures to circumambient discourses (Blommaert, Rampton, 2011, pp. 5–6). Meanings are multi-modal and in addition to using language when communicating with others, people also use gestures, movements, physical arrangements et cetera (Blommaert & Rampton, 2011, p. 6). I interpret this theory to mean that it is not necessary to stick to one named language when studying language

learning but consider all the above-mentioned aspects and accept so-called mixing of languages and styles.

According to Lantolf (2000, p. 1) the most important concept of sociocultural theory is that the human mind is mediated. Therefore, people use symbolic tools and signs to mediate and regulate relationships with other people and with themselves (Lantolf, 2000, p. 1). Language is one of the most essential symbolic tools (Lantolf, 2000, p. 1). Moreover, humans use symbolic artifacts to establish relationships between themselves and the world (Lantolf, 2000, p.1), and these artifacts are then passed from one generation to the next (Lantolf, 2000, p. 13). Some examples of culturally created mediational artifacts are conversations, metaphors and narratives (Lantolf, 2000, p. 13). The understanding of those concepts occurs through internalisation, which suggests that "the source of consciousness resides outside of the head and is in fact anchored in social activity" (Lantolf, 2000, p. 13). In other words, new meanings are first organised and regulated by others but as a result of participating in a social activity, a person will learn to mediate their own mental and physical activity and acquire an understanding of a topic/phenomenon in question (Lantolf, 2000, pp. 13–14). Gee (2004, p. 13) supports this argument by suggesting that meanings are customised, built or assembled and not something that is stored in one's head. Therefore, words do not have general and stable meanings, but they are associated with different situated meanings in different contexts (Gee, 2004, p. 19). Thus, meanings are based on the context and our experiences of the world including our past experiences (Gee, 2004, p. 19).

Another important concept introduced by Vygotsky and presented by Lantolf (2000, p. 16) is the zone of proximal development (ZPD), which is "the site where social forms of mediation develop". Vygotsky (1978) introduced the ZPD as the distance between what learners can learn through independent problem solving and what they can learn under adult guidance or in interaction and support from more capable peers. Lantolf (2000, p. 17) among many others has expanded Vygotsky's definition of the ZPD and it is today viewed as the difference between what a learner can achieve and learn alone and what they can accomplish with support from someone else or/and cultural artifacts. Thus, in situations where people work together, expertise can emerge (Lantolf, 2000, p. 17). Therefore, learning from adults or more educated people is no longer the necessity for the zone of proximal development. Actually, the goal of novices and experts interacting with each other for example in a teaching situation is not for novices to copy the experts' capabilities but interpret what is learned from the experts to suit their own values and beliefs (Lantolf, 2000, p. 17).

2.1.2 Ecology of language learning

According to Van Lier (2004, p. 3) the term ecology refers to "the totality of relationships of an organism with all other organisms with which it comes into contact". In other words, ecology studies organisms in their relations with their environment, and therefore it can be considered as a contextualised or situated form of research (Van Lier, 2004, p. 3). Ecology and sociocultural theory have very similar views on language learning and ecology can be regarded as a part of sociocultural theory. However, Van Lier (2004, p. 21) suggests that an ecological perspective adds direction and theoretical cohesion to sociocultural theory. Nunan, Bruce & Colin (2014, p. 9) define ecology as structured diversity, which means that diversity is defined "in terms of the quality of meaningful interrelationships". In language ecology, the world is full of possibilities and relations that extend in all directions (Nunan, Bruce & Colin, 2014, p. 10). Language ecology enables people to understand and respect difference, and therefore diversity in different environments actually enables people to learn from each other (Nunan, Bruce & Colin, 2014, p. 10).

Moreover, an ecological approach to language forgets backward-facing approaches to language description offering us alternative forward-looking approaches to language in which the past impacts the future (Nunan, Bruce & Colin, 2014, p. 11). In theoretical outline of my Bachelor's Thesis (Pigg, 2017), I discussed why these new approaches to language and language learning are essential and what kinds of challenges they bring to teachers. More specifically, the reason for language educators' interest in ecological approaches of language learning is that nowadays learning environments are increasingly multilingual and multicultural (Kramsch, 2007, p. 389). Kramsch, Levy & Zarate (as cited in Kramsch, 2007) further outline this as a challenge for future teachers, stating that teachers will need to operate in a globalised space (p. 390) in which teaching only one language or culture is not enough, but they need to be put in relation with one another. According to Kramsch (2006, p. 250), in addition to encounters with monolingual native speakers, language learners are likely to encounter multilingual individuals with various values and ideologies, and in these situations, learners are required to negotiate meanings which then results in understanding each other. Therefore, teaching students to exchange information with native speakers is not enough, but instead a more sophisticated competence is required (Kramsch, 2006, p. 251). Thus, I concluded (Pigg, 2017), that language learners need to master symbolic competence, which means shaping the context in which the language learning and using occurs. Furthermore, foreign language teachers must concentrate on teaching meaning in all its stylistic choices and variations and not teaching a linguistic code, and

therefore, it is important that also students understand that Language refers to a more complex concept than the syllabi of their language classes suggests (Kramsch, 2007 pp. 400, 403 and 406).

Van Lier (2004, pp. 2–3) argues that all education is language education, because language actually defines what it means to be human and therefore there is an inseparable connection between the two. In the ecological approach, language is seen as relations between people and the world and language learning is considered to be relating more effectively to people and the world (Van Lier, 2004, p. 4). Two key concepts in the ecological approach closely related to each other are affordance and emergence. Affordance, when language learning is considered, is the relationship between a learner and the environment that either offers opportunities to learning or inhibits it (Van Lier, 2004, p. 4). Therefore, affordances arise when learners are active and establish relationships with and within the environment, and learning opportunities occur when learners participate and use affordances (Van Lier, 2004, p. 94). Thus, different kinds of cultural, social and cognitive affordances provide a basis for further action, interaction and cognition (Van Lier, 2004, p. 221). Affordances can be simple things found in one's environment that have some kind of an impact on a learning process, for example discussions with other people, television advertisements, books or video games. Furthermore, in the ecological approach, language learning is seen as emergence, which means that learners start learning the basic things and after having learned them they will be able to combine these basic skills into more complex systems (Van Lier, 2004, p. 5). The purpose of affordances is then to support this process of emergent language learning (Van Lier, 2004, p. 81).

Another essential concept in the ecological theory is semiotics – the making of meaning (Van Lier, 2004, p. 55). According to Van Lier (2004, p. 55), the ecological approach to language learning "leads to a placement of learning within a semiotics of space, time, action, perception and mind". Meaning-making means that learners use signs, in other words mediated affordances that are relationships of relevance between the learner and the world, in their learning process (Van Lier, 2004, p. 63). Language surrounds the learner and it is embedded in the social and physical world being a part of other meaning-making systems and thus learning occurs as a result of perceiving, selecting and evaluating language actions and their effects (Van Lier, 3004, pp. 55–57). Basically, this means that in interaction with others learners learn to understand each other through negotiation and discussion while using the environment as a support of interaction. Thus, language learning is activity and not object: it is in the world and not only something that happens inside a learner's head (Van Lier, 2004, p. 19) Learning occurs when learners carry out various activities either together or on their own, so they are autonomous and responsible of their own actions (Van Lier, 2004, pp. 7–8). Van Lier (2004,

p. 5) also suggests that context defines language and is also defined by language. Therefore, language learning as well as all learning is situated and occurs "in the context of meaningful activity" (Van Lier, 2004, p. 223). Another important notion in ecology is that there is variability and diversity in these learning contexts – students and teachers are all different which needs to be considered when interacting and working with each other (Van Lier, 2004, pp. 6–7).

In conclusion, the ecological approach suggests that learner needs to be engaged and active for learning to occur, and the above described affordances and meaning-making systems in a meaningful context are an essential part of the learning process. When discussing agency – movement or a change of direction – Van Lier (2010, p. 4) argues that passive learners will not learn whereas compliant learners, for example those who study English as a foreign language only because they are required to do that, can have some success and pass tests, but to make significant progress in learning, learners need to take responsibility in making choices and be more self-directed when employing agency. Finally, it can be argued that the goal of language learning is not to just intensively study vocabulary lists, grammar and pronunciation but instead by interacting with each other to learn to communicate with people from different cultures with different backgrounds.

2.1.3 Situated learning and legitimate peripheral participation

The previous two subsections regarding learning theories already touched on a suggestion of learning being situated, and this subsection will discuss the concept further by presenting ideas of Lave and Wenger, whose work on the field has been significant. Hanks (1991, p. 14) introduced Lave and Wenger's views on learning by stating that they situate it in "certain forms of social coparticipation". Therefore, they study what kinds of social engagements provide the proper context for learning to occur and do not concentrate on cognitive processes or conceptual structures that might be involved in learning situations (Hanks, 1991, p. 14).

The central defining characteristics in viewing learning as a situated activity is a process called legitimate peripheral participation, which means that learners participate in communities of practitioners and to master knowledge and skills newcomers are required to move toward full participation in a community (Lave & Wenger, 1991, p. 29). The views regarding the concept legitimate peripheral participation as a central aspect in learning originate from the idea of apprenticeship (Lave & Wenger, 1991, p. 29). For example, the study on Vai and Gola tailors showed

that learning through apprenticeship was actually a matter of legitimate peripheral participation, as apprentices became skilled tailors when engaging and learning with each other and master tailors (Lave & Wenger, 1991, p. 30). It was also argued that apprentices learn mostly when interacting with other apprentices (Lave & Wenger, 1991, p. 93). The emergency of these views led Lave, Wenger and their colleagues to start viewing learners as apprentices and teachers as masters (Lave & Wenger, 1991, p. 29).

To understand the concept legitimate peripheral participation, it is reasonable to discuss the term 'peripherality' and its meaning. Lave and Wenger suggest that there may not be such a concept as 'central participation' in a community of practice, but rather peripherality suggests that people can participate in a community in various ways and from different, more or less engaged positions and locations (Lave & Wenger, 1991, pp. 35–36). Peripherality can be viewed as a way of gaining access to sources that as a result of being involved in a community lead to understanding and learning (Lave & Wenger, 1991, p. 37). Therefore, newcomers' legitimate peripherality means that they participate in a community as a way of learning, where they both absorb and are absorbed in culture of practice by for example learning the behavioural patterns, traditions and rules of the community (Lave & Wenger, 1991, p. 95). After an extended period of time spent in the peripheral area of the community, newcomers/learners become part of a community of practice (a set of relations among people, activity and world) and gradually learn what constitutes the practice of community, for example who is involved, how masters talk with each other and with those who are not part of the community of practice (Lave & Wenger, 1991, pp. 29, 95, 98).

Legitimate peripheral participation is not itself either an educational form or a pedagogical strategy per se but rather an analytical viewpoint on learning and a way of understanding learning (Lave & Wenger, 1991, p. 40). It is viewed as engagement in social practice involving learning as an integral constituent, so therefore learning is an inseparable aspect of social practice (Lave & Wenger, 1991, pp. 31, 35). From this point of view it can be argued that learning involves the whole person and their relation to social communities, not only to some specific activities, and this involvement gradually results in mastering new understandings and becoming a full participant or member of the community of practice (Lave & Wenger, 1991, p. 53). From the perspective of situated learning and legitimate peripheral participation, common notions of mastery and pedagogy are decentred: mastery does not reside in the master but in the organisation of the community of practice of which the master is member of (Lave & Wenger, 1991, p. 94). Also, when discussing apprenticeship, it can be argued that apprentices learn mostly when interacting with other apprentices (Lave & Wenger, 1991, p. 93).

In conclusion, the concepts of situated learning and peripheral participation suggest that learning occurs when learners participate and engage in social communities starting by observing from the peripheral area and slowly moving towards the full participation through interaction and engagement with others. An important notion is that learning does not happen only by observing and interacting with masters of the community, but especially when interacting with other learners and so-called newcomers of the community. Hanks (1991, p. 15) sums up this idea by stating that "learning is a process that takes place in a participation framework, not in an individual mind".

2.2 Application of sociocultural and ecological view on learning in the Finnish national curriculum

The basic values of basic education and conception of learning presented in the Finnish national curriculum are based on learning theories presented in subsection 2.1, and this subsection discusses how the sociocultural and ecological perspectives on learning are applied in the Finnish national curriculum. Starting with the basic values discussed in national core curriculum for basic education (POPS, 2014, p. 15), the key idea is understanding the uniqueness of students and their right to good and extensive education. Every student is unique and important and has a right to grow up as human and become a member of society, and schools have an essential role in supporting students in this process (POPS, 2014, p. 15).

It is also important for students to feel that they are part of a community, where they can together contribute to actions and wellbeing of the community (POPS, 2014, p. 15). This follows closely the views of situated learning and legitimate peripheral participation, where being and becoming part of a community is a prerequisite for learning and development. Through learning a student builds up their identity, world view and place in the world while also establishing relations with themselves, society, nature and different cultures (POPS, 2014, p. 15). Schools support students in building their basic values and school personnel's open and respectful attitude towards students and their families' different religions, world views and traditions forms a basis for constructive interaction (POPS, 2014, p. 15). This perspective is one of the key ideas in the ecological approach to learning, where difference and diversity are to be respected and valued and they are also seen as factors that promote learning.

The national core curriculum is based on the conception of learning suggesting that a student is an active agent: they learn to set goals and solve problems both independently and together with others (POPS, 2014, p. 17). While learning new skills, a student also learns to reflect their learning process, experiences and feelings (POPS, 2014, p. 17). Learning happens in interaction with other students, teachers and adults in different communities and learning environments (POPS, 2014, p. 17). Thus, learning means doing things individually and together, thinking, planning, studying and evaluating these processes (POPS, 2014, p. 17). Therefore, the essential part of learning process is that students develop their skills by working and learning together (POPS, 2014, p. 17). Learning together promotes students' creative and critical thinking and problem-solving skills as well as abilities to understand different perspectives (POPS, 2014, p. 17).

These above presented views emphasising learners' active role and working and learning together are again some of the core ideas of the sociocultural and ecological perspectives on learning that suggest that learning cannot happen inside a learner's head and in isolation from other people. For example, the concept of the zone of proximal development presented in subsection 2.1.1 clearly suggests that expertise emerges when learners work together and as a result, they will be able to adapt what is learned to suit their own values, history and world view. Moreover, the national core curriculum follows the ideas of situated learning by suggesting that learning is diverse and tied to the subject to be learned as well as time and place (POPS, 2014, p. 17), and therefore, learning cannot be something loose and separated from the context. Furthermore, the importance of students' own interests, working methods, feelings, experiences and views of themselves as learners guide the learning process and motivation (POPS, 2014, p. 17). This perspective is also based on the sociocultural and ecological theories that highlight the importance of considering learners' interests and backgrounds and their impact on learning process. Thus, the sociocultural concept of mediated mind and the ecological concept of meaning-making are applied in the national core curriculum, where it is stated that new meanings are made in the interactive learning process and with the help of cultural artifacts that originate from students' different backgrounds and histories. As a result of the learning process students are able to pass these meanings and new cultural artifacts forward to future generations.

Another concept in the national core curriculum that closely follows the sociocultural and ecological theories is transversal competence, which refers to the whole of knowledge, skills, values, attitudes and will as well as using the knowledge and skills appropriately in different situations (POPS, 2014, p. 20). Growing as a human, studying, working and being a citizen in the present and in the future requires knowledge and competence that exceeds and connects different information and skill fields

(POPS, 2014, p. 20). The sociocultural and ecological perspectives on learning also highlight the importance of not focusing too much on one particular school subject, e.g. mathematics or biology, but rather they encourage learners to focus on broader topics that connect various subjects together and that way students learn to work in diverse communities. Some example themes regarding transversal competence are thinking and learning to learn; cultural competence, interaction and expression; multiliteracy and competence in the fields of information and communication technology (POPS, 2014, pp. 20, 21, 22, 23). The skills of thinking and learning to learn form a basis for the development of other competences as well as lifelong learning (POPS, 2014, p. 20). Students' conception of themselves as learners and their interaction with the environment guides the process of developing these skills, and it is also important to note how they learn to observe and search, evaluate, shape, produce and share knowledge and skills (POPS, 2014, p. 20). This theme clearly derives from the ecological concept meaning-making, where learners together learn and make meanings in the situated context.

Another theme regarding transversal competence, cultural competence, interaction and expression, suggests that culturally sustainable lifestyle and acting in a diverse environment requires cultural competence, interaction skills and ways to express oneself and one's views (POPS, 2014, p. 21). Students learn to know and respect their environment, cultural heritage and they are encouraged to reflect their background and place in the chain of generations (POPS, 2014, p. 21). They also learn to pass, shape and produce culture and traditions (POPS, 2014, p. 21), which again refers to sociocultural concept of using cultural artifacts of previous generations and creating new artifacts to pass to future generations, both of which happen in interaction with other people. Another area of transversal competence, multiliteracy, refers to skills regarding interpretation and producing of texts, and these skills support students in understanding diverse forms of cultural communication (POPS, 2014, p. 22). In multiliteracy, the conception of text is wide and refers to verbal, illustrated, auditory, numeric and kinaesthetic symbol systems and information that can be expressed through these systems (POPS, 2014, p. 22). In teaching situations, it is essential to provide students with various and authentic texts, where they can individually and together interpret them, use their own strengths and focus on texts that interest them (POPS, 2014, pp. 22–23). Both of the areas of transversal competence presented in this paragraph are applied from the sociocultural and ecological theories, as they highlight the understanding of various cultural backgrounds and its impact on learning and also state that multiliteracy is an essential area of knowledge in today's world.

The final example of the areas of transversal competence presented in the national core curriculum that will be introduced in this thesis is competence in the fields of information and communication technology. As today's world is filled with technology, it is essential for basic education to provide students with possibilities to develop their skills in the fields of information and communication technology (POPS, 2014, p. 23). Students are taught to understand operational principles of information and communication technology, they are guided to use information and communication technology in a responsible, safe and ergonomic way, and they also learn to use it in investigative and creative work as well as in interaction and networking (POPS, 2014, p. 23). The goal of teaching these skills is that students learn different applications and purposes of use of information and communication technology and their relevance in everyday life, interaction and as a means of influencing (POPS, 2014, p. 23). The theme is connected to the sociocultural and ecological views as they suggest that learners need to be able to communicate and act in a globalised space, which often involves technology, which can also be seen as one extensive affordance that students use and work with while learning. Another reason for introducing these themes multiliteracy and information and communication technology is that they are closely related to the field of video games, which will be discussed further in the following two subsections.

Finally, I want to briefly discuss how foreign language learning is presented and viewed in the national core curriculum. It is suggested that language is a requirement for learning and thinking, and that it is involved in every school activity and therefore every teacher is a language teacher (POPS, 2014, p. 348). Learning languages supports students in developing and respecting multilingual and cultural identities (POPS, 2014, p. 348). These views are again clearly applied from the ecological view on learning that suggests language to be the core of learning, because, as Van Lier (2000, pp. 2–3) stated, language defines what it means to be human. Students are encouraged to communicate in authentic and multicultural environments (POPS, 2014, p. 348), which is also one of the central goals of learning in the sociocultural and ecological theory. An important notion is also that teachers encourage students to communicate and express themselves even if their language skills are inadequate (POPS, 2014, p. 21), because, as the ecological theory suggests, it is not necessary to be the master of language to be able to communicate and interact with other people.

2.3 Previous studies on video games in language education

In this subsection, previous studies on using video games in language education will be presented and discussed. The examination and discussion of selected books and articles on the topic will be divided

into two themes: why video games are/should be used in language education and how they have been/should be used in or outside classroom, again, when considered from the sociocultural and ecological perspective.

Starting with why video games should be used in language education, Gee (2004, pp. 2–3) argues that students are taught in academic content areas such as mathematics and science, in other words, school subjects, but many students do not like the types of languages used in these academic content areas, as it often seems irrelevant and difficult for them. The most ideal way for human mind to understand and learn new things, for example specialist languages, is to base them on simulations of previous experiences, which then help learners to build simulations to prepare them for situations where specialist language is needed (Gee, 2004, p. 3). Video games, then, are simulations of experience and new worlds, and therefore a favoured form of human thinking, and according to Gee (2004, p. 4), by playing video games young people can learn specialist varieties of language without it feeling and seeming irrelevant and out of context. Colby & Colby (2008, p. 301) support Gee's views as they suggest that computer games offer teaching methods that enable students to learn through embodied simulation. Thus, by playing video games, students get to practice or implement their knowledge in virtual simulations that imitate real life situations that happen in students' own world (Kirriemuir, 2003, p. 1154).

Annetta (2008, p. 229) suggests that today's students, who are often called "the net generation", need to work in environments that challenge, engage and motivate them while also being familiar to them. Video games meet these demands, as today's generation spends a lot of time playing video games, and talking and reading about them (Annetta, 2008, p. 230). In other words, video games captivate students so that they can spend hours learning in their free time (Annetta, 2008, p. 230). Therefore, playing video games can increase students' motivation to learn while also enabling them to regulate their learning through choice-making, practice and reflection of the game (Rieber et al, 1998). Moreover, video games can motivate passive students to engage and contribute more than they would in traditional environments (Annetta, 2008, p. 233, as cited in Tanner & Jones, 2000). Another reason for why contemporary video games can be used to enhance learning is that video game genre has matured in a way that it nowadays represents the world around us more authentically than it did some time ago, for example there is more agency for players and representations of good and evil are more complex than before (Ostenson, 2013, p. 78).

Beavis (2014, p. 434) has been exploring video games as emergent cultural forms, i.e. how they work as texts, which kinds of literacies are included and what kind of knowledge players need to have before being able to play. Video games can be considered as popular culture, and Beavis (2014, p. 434) suggests that students can learn about texts when they study popular culture, so, for example when they play video games. Video games can be considered as a tool to learn multiliteracy, as they have a special way of telling stories and challenging players who have to take an active role in completing those story lines and accomplishing tasks and challenges (Beavis, 2014, p. 435). Based on this notion and considering that one the areas of transversal competence presented by national core curriculum is multiliteracy, it could be argued that using video games indeed benefits learning to interpret different texts. Moreover, video game players are required to interpret different kinds of symbol systems, words, pictures, sounds and symbols provided by the often complex and sophisticated game worlds, in other words, they need to understand the above-presented diverse forms and relationships between them (Beavis, 2014, p. 435). This is what ecological view on learning calls meaning-making, so, while playing, people have to constantly make and understand meanings of these different kinds of symbol systems.

Gee (2003) argues that by playing video games gamers learn to learn for example through strategical choices, problem-solving and stealth. Games also challenge players when levels are almost too difficult for players' abilities and they can just barely accomplish missions, which results in feeling both frustrated and satisfied (Gee, 2003). Colby & Colby (2008 p. 305) agree with Gee as they state that games are designed in a way that they are neither too easy nor too difficult: by replacing too difficult tasks with ones players can handle and too easy tasks with more challenging ones, good games can keep players within the zone of proximal development. Game tutorials and levels/new missions/tasks that little by little get more difficult can be seen as factors that aid and help learning and enable players to develop their skills when proceeding in the game. Games are designed so that they require players to adapt and evolve their skills (Gee, 2003), which is also how ecological theory views language learning: as emergence. Thus, learning starts with the acquisition of easy and basic skills that little by little lead to more complex entireties. Therefore, it can be argued that learning through video games is supported by the ecological concept of emergent learning.

According to Gee (2005, pp. 34–36) some other learning principles that can be discovered from video games are identity, interaction, agency, customisation and situated meanings. When playing video games, players either inherit a strong and appealing character (in games such as Solid Snake and Metal Gear Solid) or build a character from the beginning (for example in Elder Scrolls) (Gee, 2005,

p. 34). This way, players become committed to the game worlds and they identify with the character they play (Gee, 2005, p. 34). Games are also interactive as they react to players' decisions, give them feedback and offer them new problems when proceeding in the game (Gee, 2005, p. 34). Because of the nature of video games, players can also feel that they are agents and in control of what happens in the game (Gee, 2005, p. 36). Moreover, games allow player to customise a game to fit their skill levels and playing styles for example through different difficulty levels and various ways to solve problems (Gee, 2005, p. 35). Finally, the meanings of words are situated in the actions, images and dialogues of the game (Gee 2005, p. 36), which makes it easier for learners to understand the meanings of new words. All the learning principles mentioned in this paragraph are related to the sociocultural and ecological theories, and therefore it can be argued that video games can greatly promote learning.

Another reason for why video games should be used in the English classroom is that according to Ostenson (2013, p. 71) they are one of the most important storytelling forms in the 21st century. Therefore, video games represent the society's new kinds of ways of story-telling (Ostenson, 2013, p. 71). Through studying different kinds of narratives, English language learners learn to interpret meanings from various stories through reflecting topics such as what it means to be human and care about other people and how emotions work (Ostenson, 2013, p. 72). As discussed in subsection 2.2, the national core curriculum views thinking and learning to learn as one area of transversal competence, and considering above-presented Ostenson's ideas, studying video game narratives can help learners in that thinking and learning process. Colby and Colby (2008, p. 301) also suggest that games help students think critically about what they learn by actively participating in social gaming situations. Moreover, game-based learning involves learning by doing: players construct and interpret knowledge and apply it in the virtual world according to their own knowledge and experiences (Kirriemuir, 2003, p. 1151). Based on these notions of how video games can enhance and promote learning, it can be argued that they indeed offer quite unique kinds of affordances for students to help them learn more about themselves and the world around them including the past, present and future.

After considering reasons for why video games should be integrated into language learning and learning in general, it is time to move on to consider how video games should be used and how they have been used in language learning. Hirumi (2010, p. 48) listed principles and prescriptions for educators to consider when wishing to integrate games into their teaching. Firstly, a teacher needs to brief students before a gaming session by discussing what the goal of a game is, why they are going to play it, what the rules are and what students should observe while playing (Hirumi, 2010, p. 49).

Moreover, students need to get proper knowledge on the topic before playing, which means that a teacher as an instructor needs to familiarise himself/herself with the game before using it in teaching (Hirumi, 2010, p. 50). After playing, it is important then to discuss with students how they feel, what happened in the game/during the gaming session, what did they learn and how this new knowledge from the game can be extended and applied beyond the game (Hirumi, 2010, p. 49). According to Hirumi (2010, p. 49), these briefings and debriefings are important, because that way students will be able to reflect on their learning. While playing, a teacher must observe students and be prepared to ask questions, because that helps students in reflecting their gaming experience (Hirumi, 2010, p. 50). Games used should interest both teacher and students, but they should not be too competitive and not emphasise winners and losers because that might lead to students losing interest in the game (Hirumi, 2010, p. 50). Furthermore, games used must be appropriate when considering content and objectives, for example structured games and clear learning objectives or goals decrease the control of learners, while less structured games and unknown learning objectives increase learner control (Hirumi, 2010, p. 52). Finally, teachers need to consider time-management including the time used for briefings, reflections and the length of gaming session itself (Hirumi, 2010, p. 53).

Moving on to some concrete examples on how video games have been integrated into English language learning, Ostenson (2013) played different kinds of video games with students in the English classroom to increase their knowledge and understanding of video games as narratives. Some games played were interactive fantasy-themed game *Zork*; *Myst*, a game with lush and haunting audio effects that told a story about a man being transported to the island by the odd book that described the island of Myst, and an online game *World of Warcraft* (Ostenson, 2013, pp. 73–74). While playing these games, Ostenson (2013, p. 76) asked questions such as if the game has a setting, who are the characters, if there is a plot in the game, if there is some kind of a conflict, how the story is similar to other stories students have read/seen and how the story in the game is different from the ones in a book or movie. The game *World of Warcraft* was also played in the college writing class, in which the game and writing and research traditions such as rhetoric was first introduced to students followed by the gaming session where students' task was to look for rhetorical features that create opportunities for emergent learning (Colby & Colby, 2008, pp. 307–309). One example project based on this was a strategy guide written by a student (Colby & Colby, 2008, p. 309). Another example of using games in English classes presented by Hirumi (2010, pp. 160–161) was to play drill-and-practice games such as *Spelling Challenges and More* in which students could practice their spelling in different interactive word games or *Free Rice*, a vocabulary activity game with a humanitarian viewpoint,

where students' correct word definition answers donated 20 grams of rice to the United Nations World Food Program.

Kirriemuir's (2003) study describes scenarios in which games were used both outside and inside classroom in the UK, the US and mainland Europe. As for using games outside classroom, they were used as research projects, where students evaluated games and played simulation games to assist them in the development of their numerical skills (Kirriemuir, 2003, p. 4). Games were also used in school-oriented competitions, for example in one national competition students were introduced to engineering with the popular Sim City software and used the simulation game as a tool to create a scale model of their own city (Kirriemuir, 2003, p. 5). Moreover, games were used in computer clubs and as a reward for good behaviour during breaks (Kirriemuir, 2003, p. 5). Most of the games used in classes were strategy or simulation games, for example game *RollerCoaster Tycoon* was used in many cases, for example in teaching physical concepts such as velocity and gravity or teaching business and economics such as running a theme park (Kirriemuir, 2003, p. 6). Web-based guides to games were also created (Kirriemuir, 2003, p. 6).

Some studies also discussed a possibility of creating video games with students. Annetta (2008, p. 234) introduced a way to use games in distance learning. In this project at North Carolina State University's College of Education, a virtual world platform called The Wolf Den, was created for distance learning and video game creation for teacher trainees. The platform included online courses where students created avatars for themselves and communicated and interacted with each other and designed and created role-play games (Annetta, 2008, pp. 234–235). Another project HI FIVES (Highly Interactive Fun Internet Virtual Environments in Science) was a tool for teachers to make video games for their classes and students were also able to learn about game design and creation process (Annetta, 2008, p. 235). Beavis (2014, pp. 433, 437) also presented a project where Catholic boy school students played, analysed and reflected on game *Secret Agent: Mission One*, which is a side-scrolling platform game from 1992 where players need to work their way up different levels by collecting items and surviving dangers until winning the game by accessing the main fortress. Based on that game students designed a new game whose purpose was to teach about positive moral choices, and the process included learning about the generic features of games and their narrative, players' involvement with the game and other players and also the playing context and technological aspect (Beavis, 2014, p. 438).

The above-presented studies offer useful insights to why and how video games are used in language education (and in education in general), and their relevance to language learning is supported by sociocultural and ecological theories in terms of for example interaction, active participation, critical thinking and authenticity. However, the studies also highlight some challenges that integration of video games into classes have – education does not have resources and money that game studios would need if they were to start designing educational video games (Hirumi, 2010, p. 157). Moreover, access to computers and other game equipment can be a problem, teachers' and students' response to video games can vary and the whole process would be time-consuming for teachers (Hirumi, 2010, p. 158). All in all, it seems that for teachers to be able to integrate games into their teaching they need to be familiar with games and also know students and their learning preferences and methods. The use of games needs to be prepared carefully and pedagogical significance of playing games needs to be understood and considered.

2.4 Different types of video games and their suitability to language learning from sociocultural and ecological view

This subsection introduces different video game genres and discusses how these different types of games could be integrated into language learning and teaching from sociocultural and ecological perspectives. Even though the analysis of this master's thesis focuses on game *Detroit: Become Human*, the consideration of different video games and video game genres is important from the point of view of further research and deeper understanding of the topic.

There are different types of video games, in other words, video game genres, that, according to Vince (2018), are categorised either by their characteristics or underlying objectives. According to Vince's (2018) listing of types of video games, they can be divided into nine genres: action games, action-adventure games, adventure games, role-playing games (RPG), simulation games, strategy games, sports games, puzzle games and idle games. In action games, the player is at the centre of the action that mostly consists of physical challenges (Vince 2018). Subgenres in this category are for example platformer games, where game character, typically running and jumping, interacts with platforms and shooter games (first-person shooters or third-person shooters), where players use weapons in action scenes with their goal to kill enemies (Vince 2018). Action-adventure games such as survival horror games combine both action and adventure by providing game-long quests or challenges that must be completed with appropriate tools or items as well as action elements where these items are used (Vince, 2018). In adventure games, then, players interact with the environment and other characters

to proceed in the story or gameplay, but the genre is not very popular as it lacks traditional video game action elements (Vince 2018).

From these video game genres, I would suggest action-adventure games as most suitable to language learning, because pure action games often including a lot of shooting and fighting might not be the most ethical ones to consider to school environment and adventure games do not seem to be that popular in the gaming community and therefore the concept is maybe not that familiar and interesting to students. When playing action-adventure games, students would be able to both participate in the game through action and also interact with each other and the game through the story line or quest. In sociocultural and ecological theories, both of these elements are considered as essential factors that promote learning. However, the type of action in games should be carefully considered by the teacher, because they often include fighting scenes that can be quite brutal and graphic and probably not that suitable to classroom.

Moving on with Vince's (2018) listing of video games, role-playing games (RPG) often feature medieval or fantasy settings. RPG also often provide players with various choices that lead to alternative game endings (Vince 2018). Some examples of role-playing games are action RPG that include elements of action games and adventure games and where the combat takes place in real-time depending on a player's skills and character attributes, massive multiplayer online role-playing games (MMORPG) that involve hundreds of players interacting with each other in the game world and sandbox/open-world RPG where players can freely explore the huge game world full of side quests and characters (Vince 2018). In my opinion, role-playing games have a potential to be used in English language learning and teaching, as the various kinds of games and often very detailed and unique game worlds offer a lot of content for studying language, cultures and traditions and also enable interaction with people from all over the world. However, specifically open-world games that usually are very long and complex, might not be the most suitable and convenient option for the classroom activity due to limited time.

Next up in Vince's (2018) listing of video game genres is simulation games that are designed to simulate a real situation or event. For example, the life simulation game *The Sims* allows player to control the individual aspects of artificial life (Vince, 2018). In my opinion, simulation games that can offer real-life related experiences could be suitable to be used in English language classroom and learning language and different phenomena and cultures could be authentic via game simulations. Strategy games, then, require players to use developed strategy and tactics to complete challenges

(Vince, 2018). Different types of strategy games include for example real-time strategy (RTS) games where players collect and maintain resources and develop them and turn-based strategy (TBS) games, where players are given time or turn to take action (Vince, 2018). I do not view strategy games as the most suitable option to be used in language learning, because their focus on strategy and planning is not necessarily the goal of language learning even if it can help students develop useful skills.

Moving on to last three game genres presented by Vince (2018), sports games, then, simulate sports such as football, golf and basketball and can also include Olympic sports such as skiing and even pub sports such as darts and pool. Opposing players can be either computer-controller or other people (Vince, 2018). Puzzle or logic games require players to solve problems to advance in the game and they usually take place on a single screen whereas idle games are simplified games that do not involve much player involvement (Vince, 2018). These three types of video games might not be particularly useful to be used in English language learning or teaching, because they often are quite simple and do not require a lot of action, involvement and interaction, which are some of the most important factors in learning process.

In addition to the video game genres presented above, it is important to note that most games are designed purely for the entertainment purpose, but there are also educational games or so-called serious games. The term serious games refers to video games that are produced, marketed or used for other than entertainment purposes, including for example educational computer games (often called edutainment), health games and political games (Nilsen, Smith & Tosca, 2008, p. 205). Two examples of educational games introduced by Annetta (2008, p. 230) are *Immune Attack*, a first-person strategy educational game consisting of biology and immunology topics and *Food Force*, a serious game in which players engage in missions in a famine-affected country to distribute food and help it recover.

All in all, the examination of previous studies on video games in language education revealed that there are no extensive guides available for how different types of video games could be used in different situations and when studying various themes in English courses. Therefore, it is preferable that teachers who wish to integrate video games into their classroom are familiar with video game genres and thus can consider what kinds of games would best suit to the topic being studied to promote students' language learning process. As for choosing between educational games and games designed for entertainment purposes, it again depends on the type of game and how the teacher wishes to use the game in teaching.

3 Research methods and materials

In this section, research methods and materials used in this master's thesis will be introduced and discussed. First, the overall methods and approaches used in this study will be presented. Then, the implementation and results of a prior first-stage learning experiment will be presented followed by research materials of this study, that is, the implementation of a second-stage learning experiment including the gaming session and interview with upper secondary school students. Finally, interviewees' backgrounds will be shortly discussed.

3.1 Methodology

The method I will be applying in the process of data analysis is qualitative content analysis. The goal of this approach is to create a verbal and clear description of the phenomenon being studied by organising the data into a compact and clear form without losing the information the data contains (Tuomi & Sarajärvi, 2017, p. 90). That can be accomplished by making sense of the data by identifying key concepts and themes that appear (Lichtman, 2012, p. 243). That is, the analysis begins by coding the data, the interview and the game session transcripts by choosing words to mark the data (Lichtman, 2012, p. 243). The codes will then be organised into categories and subcategories, and as a result, there will be a couple concepts and key themes that will be analysed further in section 4.

3.2 Research materials

This master's thesis is based on an earlier study conducted for the subject didactics course in pedagogical studies. In both studies, the research data was collected from a learning experiment, where upper secondary school students played a game called *Detroit: Become Human* (Quantic Dream, 2018). During these gaming sessions, students played two chapters of the game, "Shades of Color" and "Painter". The game is set in Detroit in 2038, where a company called Cyberlife has developed androids to work and live alongside humans. The game follows stories of three different androids who all come from different environments with different backgrounds. Two chapters played in these learning experiments follow the life of android Markus. The main idea of the game is to solve what causes androids to deviate from their original programming which then causes a lot of problems to the society.

This particular game is well suited for a learning experiment because it presents various moral issues such as inequality, unemployment and racism, and these topics are also important to discuss in school. The relationship between humans and androids is an interesting theme in the game and provides content for further discussion with students. The labour market favours androids as free workers which has led humans to lose their jobs, but androids are still viewed and treated as second class citizens with no rights for example to free time or creativity. The clear division between humans and androids can be considered as othering, which refers to prejudices towards a certain identified group and assumptions that they pose a threat to the favoured group (Powell, 2017). In addition to the concept of othering being visible in the game, it is also viewed as a problem of 21st century causing division and dehumanising of groups (Powell, 2017). Therefore, the authentic and real game themes and issues presented above can be connected with today's world, which, according to learning theories presented in previous section, is necessary for learning to occur in a meaningful and motivating manner. Furthermore, the game is also interactive letting the player choose from various discussion alternatives during the cut scenes, which increases players' sense of agency and responsibility.

The first-stage learning experiment was conducted in autumn 2018 together with Anniina Paananen, and the target group was upper secondary school students. The study was a part of the course in pedagogical studies called *Tutkiva ainedidaktiikka*, which could be translated into English as explorative/investigative subject didactics (Paananen & Pigg, 2018). The goal of the study was to examine how video game *Detroit: Become Human* could be used as a text and exercise for an optional English writing class. The learning experiment session was conducted during one class by playing two chapters from the beginning of the game together with 19 students. A PlayStation 4 game console was brought to the classroom and the game was projected to the smartboard. Before the gaming session, the game was introduced to the students and instructions on what was going to happen during the gaming session and after it were given. During the gaming session, students took turns in using the controller and were also advised to make in-game decisions together. When necessary, Anniina and I as instructors guided the players, and the language spoken during this gaming session was Finnish. The session was filmed, and observations were written down to help us analyse the session afterwards.

To understand the starting point for the master's thesis study and the changes made based on the results of the first-stage learning experiment, the summary of the results and feedback will now be shortly presented. That is, after the gaming session, students filled in the questionnaire considering their thoughts and opinions on the gaming session. Two example questions in the questionnaire were

"what did you think of using a video game as a text in class" and "was learning experiment functional and why or why not?". The feedback included students' both positive and negative views and experiences as well as ideas for future development of this kind of experiment. Many students viewed playing a video game in class as a nice change to normal classes they have, because it was interesting, fun and a new way to teach. One student viewed the gaming session as an authentic experience, because the players could actually experience the game events as they played themselves and therefore, they could feel that they were actually participating in the activity.

As for negative feedback, some students thought that the game or gaming session was boring, because only one student could play at a time and there was no proper action in the chapters played. The decision of relatively easy chapters from the beginning of the game was intentional, because we thought that everyone would be able to play and understand the game, because not much had yet happened in the story. Some students viewed that traditional teaching methods are better and playing a video game is not a good way to learn English and writing. Students' suggestions for further development of this learning experiment session included playing in small groups, better introduction to the game before the gaming session, discussion of the game themes and topics during the game-play and also considering a more interactive game so that students would get a chance to use English more.

Many students thought that playing the game would not help them in the written assignment, in which they were asked to consider challenges and benefits of advanced technology and the relationship between humans and androids as presented in the game. However, reading through their assignments revealed that they had actually been able to reflect on these themes in a mature way and use game events as a basis for their arguments. To mention a couple examples, unemployment was seen as a problem caused by advanced technology whereas artificial intelligence as a product of advanced technology was viewed as useful in helping people in their everyday chores. The unequal relationship between humans and androids was also discussed from different viewpoints such as viewing androids as computers and therefore inferior to humans. All in all, the game evoked various thoughts and opinions among students and the events experienced in the game were compared to real life.

As mentioned above, based on the feedback and experiences from the first-stage learning experiment, the necessary changes were made to make the second-stage learning experiment more functional. Before the session, four students that participated in the study were provided with information sheet, consent form and privacy notice, in which the nature of the study was described, and students' rights

presented. In this study, the number of participants was much smaller, because playing with the whole class was seen as problematic in the first-stage learning experiment, as not everyone got a chance to play and participate. For the learning experiment session, we brought all necessary equipment including the game, a PlayStation 4 console and a computer screen to school. In the beginning of the session, we introduced the game to students, and they watched a trailer of the game so that they could grasp a general idea about what was going to happen in the game. The language spoken during the gaming session was English. After that, students took turns in playing so that one student played at a time. To make the learning experiment session as interactive as possible, we asked students guiding questions about the events and characters of the game while they played, and they were also very active in commenting the course of the game themselves, so the discussion was flowing throughout the gaming session. The session was filmed from two angles, one camera filming the students and the other filming the screen so that both their reactions and actions in the game could be recorded. The film recordings were then transcribed to make the data analysis easier.

After the gaming session, the students were interviewed in a group. The interview was divided into two themes, and in addition to that, the interviewees were asked about their previous gaming experience and English language proficiency. The first theme was students' views on the use of video games in learning and teaching, whereas the second theme was students' perception on language learning. The goal of the second theme was to learn about students' current perception on language learning and then possibly develop and expand their understanding of it by discussing the views of contemporary learning theories and drawing a connection between language learning and video games. More specifically, the interview questions were:

1. What kinds of video games have you played and how much? What is the role of gaming in your life?
2. What do you think about the use of games in learning/teaching? How have they been used in teaching so far?
3. How would you like games to be used in teaching?
4. How would you describe your English language proficiency? What are your strengths and weaknesses? Which learning methods suit you the best?
5. How do you see language learning? Where does it happen and with which kinds of tools?
6. How using video games in language learning fits into your view of language learning?
7. Which themes from the game would you bring up? Could they be discussed in teaching more extensively, such as in school subjects other than English?

The interview was recorded, and language spoken was Finnish. Even though we had prepared interview questions, students were able to speak quite freely, and the topics were expanded based on what they talked about. That is to say, the goal of the interview was to prompt the students to discuss with each other and share their opinions in a relaxed interview situation with the help of interview questions. The interview was transcribed, and for ethical reasons, students were given pseudonyms Jonna, Pekka, Antti and Kalle, so that their identity could remain anonymous. It should be mentioned here that Pekka stayed mostly silent during the interview and only answered questions such as what games he plays and what is his English language proficiency. Finally, again for safety and ethical reasons, both gaming session videos and interview recordings were stored on personal hard drives.

In the beginning of the interview, the interviewees were inquired about the role of video games in their life. All of them were enthusiastic gamers and they described that playing games is their hobby and that they spend quite a lot of time playing games, often several hours per day. In addition to that, Antti described playing as a way of relaxation, while Kalle stated that it is a way to pass time. They were also inquired about what kinds of games they play, and the answers varied from online games such as *Counter Strike* and *Fortnite* to simulation role-playing game *Stardew Valley* and survival video game *The Long Dark*.

In addition to inquiring students about their gaming habits, they were asked about their English language proficiency as well as what they consider their strengths and weaknesses in English language. All of them answered by first telling their school grade in English – Antti and Kalle' grade varied between nine and ten, Jonna had grade nine and Pekka had grade six. For Antti, English was the easiest school subject. As for Pekka, even though his school grade was not as good as the others' grade, he said that he is able to play games in English, and others commented that he definitely can speak English. When inquired about their strength and weaknesses in English language, they mentioned vocabulary and dialectal words. In addition to that, Jonna mentioned that when speaking fast, the structure of the sentence may not always be correct but that is something one may not even notice.

4 Analysis

In this section, the data and results from the learning experiment session including the gaming session and the interview will be analysed and discussed. This section is divided in two themes: "Students' perception on language learning – the role of personal motivation and theory-based classes in meaningful learning" and "Affordances of playing *Detroit: Become Human* and other video games – Emotions, reflections and cross-curricular learning". The themes that appeared from the data will be presented in the light of sociocultural and ecological theories as well as studies on video games discussed in section 3.

4.1 Students' perception on language learning – The role of personal motivation and theory-oriented classes in meaningful learning

In this subsection, students' perceptions and experiences of contemporary language education system In Finland will be presented. After that, their contemporary views and perceptions on language learning will be discussed and all this discussion will be presented in the light of sociocultural and ecological theories. The central themes that appeared from the interview that will be discussed in detail in this section are personal motivation and students' active role in learning, the need for meaningful language learning and language classes' inauthenticity and focus on theory.

During the interview, it became clear that based on students' language learning experiences, they were quite critical towards the contemporary language education system in Finland due to its focus on theoretical aspects of language such as grammar. That is, students felt that language learning in English classes does not really correspond to skills needed in communicating in English in real life. Students' earlier experiences from different primary schools naturally differed from each other quite a lot, but their opinions on upper secondary school language education was pretty much on the same level. In general, from the students' experiences, it became clear that students' and teachers' needs were not met, as students viewed that the kinds of methods used in their primary school English classes did not prepare them for using English in real life. The focus was on theoretical aspects of language such as grammar and vocabulary. For students, a different kind of approach to language classes would have been more useful and meaningful. However, there were also more positive experiences. That is, Antti said that in his primary school, English lessons from grade three to six were held mostly in English, and Finnish was used only in emergency situations, even though the

school was Finnish. This was very surprising to Kalle and Jonna, as their experiences of language classes differed a lot from what Antti told them. That is to say, Kalle mentioned that English was very rarely spoken in his English classes, and therefore pupils were not able to speak and pronounce English at all, but instead they pronounced the words as they were written, apparently following the Finnish pronunciation system. Instead, the focus on Kalle's English lessons had been on theory and vocabulary. Furthermore, Jonna thought that while the quality of her English teaching had not been necessarily bad, the focus was again on theory, for example on how to form a sentence. In addition to that, written exercises were more common than oral and listening comprehension exercises.

Related to students' criticism towards the theory-based language learning, they stated their opinions on the issue from various viewpoints. In subsection 3.4, students' English language proficiency was discussed based on their school grades, and during that conversation, Jonna mentioned that in upper secondary school, they have had one oral exam but otherwise the focus has been on more theoretical aspects of language. Therefore, students argued that for example Pekka's English grade six most likely does not reveal his actual English language proficiency, because others said that in gaming environments and situations, he can actually speak the language despite his grade. Moreover, students understood that theoretical aspects of English language such as structure of sentence are something that do not really matter when speaking in real life situations, but rather mistakes in them only mean losing points in an exam. However, students acknowledged the fact that English language proficiency in Finland is quite high, and matriculation examination results in English have been good. That led them to wonder whether the emphasis on theoretical aspects of language has actually been a good or bad thing. Kalle even thought he remembered reading that Finns would know English grammar better than some native speakers of English language. Finally, Jonna concluded her opinion on the matter by saying that vocabulary and a natural way to speak language comes from the outside world, whereas school teaches her to use language in more specific situations such as in job interviews.

Moreover, the possibilities of today's modern technology and its effect on language learning was acknowledged by students. That is, they understood the fact that during their primary school years, the possibilities of hearing and using English in class were not on the same level as they are today. They also understood that during that time, materials used in lessons consisted of a physical book and a CD that had all the listening comprehension exercises. Students presumed that in today's primary school English lessons, more extensive and innovative materials such as YouTube videos in English are used, which enables young pupils to hear English language in action in real life situations. The mention of the use of YouTube videos in English language learning was interesting, because for my

Bachelor's Thesis, I studied how or whether YouTube videos are used in English language learning and teaching in secondary school, and the results showed that YouTube videos in English are used by teachers and students both in free time and at school (Pigg, 2017).

It became clear that students' language class experiences have not been particularly meaningful, and there seems to be areas of improvement. Theory-based language learning including the emphasis on written exercises and grammatical accuracy instead of actually talking in class and practicing using language in real life interactions was not appreciated by students. Instead, they believed that language learning occurs in real life situations when they can actually speak English and use the language to communicate with other people. That is closely related to Van Lier's (2004) idea of meaning-making that suggests that learning occurs in interaction with the environment and other learners. The national core curriculum also suggests that students are encouraged to work in authentic and multicultural environments (POPS, 2014, p. 348), but based on students' perceptions on what language classes can offer them, it seems that the environment has not been authentic. Moreover, Van Lier (2004) also stated that learning occurs when learners carry out activities and are autonomous and responsible of what they do. That, I believe, can be connected with students' understanding that learning is easier or more meaningful for them when they are learning from a personal need in their free time. In those situations, students employ agency as they are responsible of their own learning, and it was interesting to learn that their understanding was supported by Van Lier's ecological views on language learning.

Based on the criticism on contemporary language education system, students continued discussing areas of improvement based on their own language learning experiences. Students acknowledged the fact that personal motivation plays an important role in language learning and suggested some areas of improvement for language classes as well as highlighted some issues in the contemporary education system. Based on these rather critical and negative views on language classes, it seemed that students do not view language classes as particularly engaging and encouraging. They even said that the focus on grammatical mistakes and correct pronunciation has led many students to be uncertain about their English and therefore, they are afraid to speak in class. The fact that students do not feel encouraged to speak reveals a lot from the overall atmosphere and emphasis in contemporary language classes. The importance of overall language learning environment in language learning process is also highlighted by contemporary views on language learning. That is, these notions are closely related to affordances, that is, relationships between learners and the environment that can either offer opportunities to learning or inhibit it, as discussed by Van Lier (2004, p. 4). In an above-

described environment, it may be difficult for learning opportunities to arise, as students do not feel encouraged to use the language.

An example of the lack of personal motivation that was briefly mentioned in the earlier paragraph was given by Jonna, who said that students who are not motived to learn English only study from a book and do the minimum to pass exams. This view was also supported by Van Lier (2004), who stated that these kinds of passive learners whose only goal is to pass tests cannot make significant process in learning. The national core curriculum also highlights the importance of considering students' own interests, working methods, feelings, experiences as well as views of themselves as learners (POPS, 2014, p. 17). However, based on how students described language classes from their and their classmates' perspectives, considering the needs of different learners still is an area of improvement, and students were clearly aware of this issue. An example of these kinds of views and criticism can be seen from the following interview excerpt.

(1) Jonna: Nii et ne joita kiinnostaa nii ne on oikeesti hyviä mut sitte ku jotku haluaa vaan käyä tunneilla ja päästä läpi [kurssit] nii ei ne… Ku ei kuule…

Antti: Sitä paitsi sitä paitsi jos ne ei nää tarvetta, sille pitäs keksiä joku ns syvempi tarkotus sille englannin kielelle siellä tunneillakin.

Jonna: Mm.

Kalle: Koska englanti ei oo kieli jota voi opetella kirjasta.

Jonna: Ei.

Antti: Ei. En… Englanti ei voi minun mielestä oo semmosta että noniin nyt opetellaan nämä lauseen jäsenten nämä ja nämä hommat ja nuo… Siis mää sanoisin että oppii enemmän puhumalla ehkä.

Translation: *Jonna: Yeah, those who are interested are actually good but then some people only want to attend classes and pass [courses] so they don't... Because they don't hear...*

Antti: Besides, besides, if they don't have the need, there should be some kind of a deeper meaning for English language in classes as well.

Jonna: Yeah.

Kalle: Because English is not a language that can be learnt from a book.

Jonna: No.

Antti: No... I... I think English is not something like now let's study these sentence elements and this and that... So, I would say that one learns more by talking, maybe.

So, in her school environment, Jonna had noticed that students who are interested in languages succeed on courses, whereas those who only wish to pass exams and courses do not succeed as well, because their motivation is not personal. Antti's suggestion for this problem was that there should be a deeper meaning for English language in classes for students who do not view language learning as important. That is to say, studying English in school should be made meaningful for all students. Others agreed with him, and Kalle continued the discussion by stating that English is not a language that can be learnt from a book, which I think, is a very important notion. This opinion was again supported by others, and Jonna mentioned that learning English through studying grammar such as sentence elements is not a correct way to learn the language but rather learning occurs when one actually gets to speak English. When inquired about students' suggestions for more engaging ways to learn English in classes so that they would not be afraid to speak in class Antti suggested that a larger number of group activities might encourage students to be more active.

After discussing students' English language proficiency and experiences and perceptions of contemporary language education system in Finland, they were inquired about their perceptions on language learning – where it occurs and with which kinds of tools. Jonna and Kalle both strongly thought that the foundation for English language proficiency comes from school. That is to say, Jonna stated that one cannot just jump into a conversation in English without any background knowledge and English lessons have been a place to start learning the language. Kalle supported this argument by saying that learning English starts from a book in primary school. This strong belief in language learning starting in school was quite interesting, as it seemed that students' background in this particular area had been similar. Therefore, they did not point out possibilities or situations where language learning could start in other environments and situations such as in bilingual or multilingual families or environments.

Related to students' contemporary understanding that learning a language starts in school, it seemed that they could not see the wider picture of language emergence and language learning and think about environments and situations in life where English language learning could occur even before starting to study English in school. Furthermore, as students already were quite skilled at English language, they thought that they do not really learn new things anymore in language classes. That is to say, Antti stated that he does not really study anything new in language classes except for words.

Moreover, Jonna said that when studying grammar, she already knows the rules because she uses the language so much that they come automatically, for example she knows where to place the subject of the sentence without actually studying the theory. These views of students suggested that their view on the purpose of language classes is actually quite limited, because they seemed to think that the only areas of language education are theory-based areas such as grammar, vocabulary and pronunciation. They did not consider the possibilities of learning about new cultures, traditions and other contemporary phenomena such as environmental issues that often are included in language lessons and books. The national core curriculum suggests that working and learning together with other students is an essential part of learning process (POPS, 2014, p. 17), and based on students' views that language classes do not promote their learning, they did not seem to be fully aware of the importance of working together. Although, it is also possible that group activities in class have not been executed in a way that would have supported meaningful learning.

Despite students' views that language learning starts in school, they stated that later learning has mostly occurred through their free time language interest and use boosted by personal motivation. That is, it became clear that personal interest in consuming media in English has greatly supported their language learning. Jonna assumed that about 90 percent of her English language proficiency has developed through YouTube, the Internet, games and other mediums used mainly in free time. Kalle said that language learning continues to develop through discourse, because in conversations with other people, new words and grammar are learned and absorbed. He also stated that discourse occurs everywhere and gave examples such as television, films, the Internet and YouTube videos. Other tools used in language learning mentioned by students were foreign newspapers and news in general. All the language learning tools mentioned in this paragraph were used by students in their free time.

Another example of personal motivation and interest in language learning and use was given by Antti, who said that if he was to play a game such as *Witcher 3* and during the gameplay came across an unfamiliar word, he would want to know what that word means.

> (2) Antti: Vaikka Witcher 3, joo. On olemassa nyt vaan tällanen peli ja siinä on joku sana mitä mää en tiiä niin mulla ei oo heti semmonen niinkun, vähä niinku jossain ruottin kielessä, että ei sillä oo niin väliä. Mä oon tunnilla ja että ei sillä oo niin väliä, ei se yks sana paljoa haittaa. Ku mä pelaan sitä peliä, niin mä haluan tietää, mitä se sana tarkottaa, ihan vaan sen takia, koska mulla jää joku osa siitä niinku, mulla puuttuu siitä tekstistä jotaki, joka voi olla vaikka, tärkeä lauseesa, jonka joku tietty hahmo sanoo

siinä pelissä. Mulla on semmonen, niinkun… …niin, mää katon kääntäjästä tai jostaki synonyymipaikasta sen sanan ja oon silleen että ahaa se tarkottaa tätä ja sitte mä opin sen [sanan] siinä niinkun tilanteessa paljon paremmin ku mulla on joku tarve oppia se sana.

Translation: *Antti: Witcher 3, for example. There's a game and there's a word I don't know, and I don't feel like, as in Swedish class, that it doesn't really matter. I'm in class and it doesn't matter, one word doesn't matter. When I'm playing that game, I want to know what that word means, because a part of it would, something would remain unclear in the text, and it could be important in that sentence a game character just said in the game. I have, like... ..., yeah, I check that word from the dictionary or a synonym dictionary and I am like okay it means that and then I learn it [the word] better in that situation, because I have a need to learn that word.*

Thus, Antti understood that he learns better in these kinds of situations when he actually has a personal need to learn a specific word. Then, compared with his experience in encountering new words in Swedish classes, he has not been interested in checking up meanings of those words because a classroom context has not felt meaningful and important for him, whereas new words in gaming dialogues have been situations where he has felt a need to learn the appropriate vocabulary. Jonna agreed with Antti's opinion as she said that when studying vocabulary lists for a vocabulary test, it is easy to just skip a word by thinking that one is most likely to pass a test anyway.

Related to those views, students were inquired about whether they feel that learning a language is meaningful when it happens for themselves and is related to their interests. In general, students strongly viewed that language learning occurs in real life situations and from a personal need and interest to learn. Moreover, Antti thought that learning does not necessarily need to be interesting for them for learning to occur, but rather emphasised that learning occurs in real life situations. For example, if one is engaged in a conversation and something they do not know comes up, they want to learn it to be able to understand what is being discussed. In contrast to that, studying vocabulary lists is not near as meaningful. Jonna also mentioned that many people, who apparently do not actively use English in their free time, say that they only know words they have learnt from books and nothing else. She considered this way of learning to not be the most effective method.

Moving on, on one hand, students seemed to quite clearly separate free time language use and learning from school language use and learning. They seemed to think that language class is not a particularly meaningful and motivating place to learn English, which can be seen in the examples above. That is, Kalle said that it is different to just see a new word in a textbook and check up the meaning of it from the vocabulary list than come across a new word at home and actually think about the context and the meaning of the word. Moreover, as mentioned earlier, Jonna thought that 90 percent of her English language learning has occurred outside school, for example from YouTube, games and the Internet. On the other hand, Antti mentioned that he uses English he has learnt at home to get good grades in school, and that could be seen as some kind of a connection between language in free time and in school. When considered from the point of view of Vygotsky's theory on and Lantolf's development of the zone of proximal development, which is the difference between what one can learn alone and with support from other people and cultural artifacts (Lantolf, 2000, p. 17), language classes should be viewed as meaningful learning environments especially when doing groupwork. Students actually suggested that group activities might encourage learners to use language, so they probably have not had that many group tasks where they could have learnt with the help of one another. Furthermore, the national core curriculum stated that it is important that teachers encourage students to communicate and express themselves even if their language proficiency is limited (POPS, 2014, p. 21). This goal probably has not been reached because students have been reluctant to speak in classes due to fear that there would be inaccuracies in their talk and that their mistakes would be instantly corrected. All in all, the separation between language learning in school and in free time probably has to do with students' past language learning experiences, as they have felt that learning has not happened in a meaningful context and has not been connected to real life experiences.

Related to that theme, students were specifically inquired about whether they themselves think free time English language use and English language use in school are separated from each other. As described above, it became clear that students saw the difference between free time English use and English use in school, and free time English use was considered more meaningful than English in language classes. These opinions can be seen in the following interview excerpt.

> (3) Kalle: No siis, tietysti onhan ne erillään. Sä voit kirjasta sanoa tämä, ja sitte se on tuo. Niinku että tässä on tämä sana niin se tarkottaa tätä. No niin selvä, se on siinä. Sitte tuota vaikka kotona, netissä joku sanoo jonkun sanan, sää mietit mikä se on, sää mietit kontekstia, mitä se tarkottaa. Ja niinku että mitä muita sanoja se käyttää sen kanssa, että jos se vaikka, no mää en keksi mitään esimerkkiä mutta niinku että tietysti siitä voi siitä

samasta lauseesta voi niinku päätellä että mitä sanaa se saattaa tarkottaa. Sää voit
käyttää kääntäjää, sieltä kattoo [sanan] samalla niinku koulussa katotaan kirjasta.

Translation: *Kalle: Well, of course they are separated. From a book, you can say this,
and then it is that. Like, there's this word and it means that. Well, okay then, that's it.
Then, like, at home, someone says a word online, and you think about what it is, you
think about the context, what it means. And like, which other words can be used with it,
so, if, I can't think of an example but like, of course one can assume from that sentence
what that specific word might mean. You can use translator, check up [a word] there
like you would check up from a book in school.*

Thus, it became clear that Kalle and other students understood the meaning of a context in learning
situations. In interview excerpt 3, Kalle felt that learning vocabulary in school is quite out of context,
probably because vocabulary exams are still quite common, and students often only revise single
words without checking up the context in which they are used. That supports the argument that
students understand the meaning of a context in language learning, because for example, when
learning vocabulary, it is important to see the wider context in which words are used. In those
situations, it is often possible to guess the meaning of a word from the context without checking up
the translation or definition of that word. Furthermore, in those situations, a learner can see how a
specific word is used in action. Moreover, it seemed that words students encounter in their free time
and learn by themselves are viewed as more important than words learnt in school, which is most
likely due to personal effort made when learning in free time. In the light of sociocultural and
ecological theories, the above described views of students are exactly similar to Van Lier's (2004)
description of language learning being situated and occurring "in the context of meaningful activity"
(p. 223). Furthermore, Gee (2004, p. 19) suggested that because meanings are customized, built and
assembled by language users, words do not have stable meanings, but they are associated with
different situated meanings in different contexts. In Kalle's interview excerpt, similarities to Gee's
suggestion can be seen, even though Kalle's understanding of the matter is more straightforward.
That is to say, students could understand that learning language cannot be studying single words that
are taken out of context, and again, that it is important to make learning situations meaningful so that
students actually have a personal need to learn something new.

All in all, the above described views of students' language learning in class clearly suggest that
language learning in school has not been meaningful and authentic – it has not seemed to provide real

life experiences and guidance to using language in real life and topics other than theoretical ones are not in a key position even though they should be. Thus, it seems that language learning in English classes has not actually managed to go outside the classroom so that students could feel they are learning to be able to use English in real life and not to pass exams. Jonna compared grammar classes in English to those in Swedish and stated that she knows for example where to place the subject of the sentence without actually studying the theory but couldn't do it in Swedish and does not really understand those grammar classes because she does not use Swedish language in her life. Students felt that English is now kind of another native language for them, and therefore using it is very natural and normal. Therefore, language teachers should aim at challenging these skilled students in a way that language learning in school so that they could view language learning in classes as a meaningful activity. In general, there seems to be a clear gap and contradiction between students' needs and perceptions of meaningful learning and the actual execution of language classes.

Finally, the above-mentioned gap and contradiction on what language learning in school should be and what it actually is probably has had an effect on some areas of students' perceptions on language learning causing possible limitations in how they view it. That is, one thing that suggested that students' overall understanding of language learning and proficiency might be somewhat limited appeared during the discussion of their English language proficiency. As mentioned in 3.4, students described their English proficiency by their school grades. That is a natural answer for an upper secondary school student, especially in a school environment where the learning experiment was conducted, but still, they were not specifically inquired about their school grades as we asked what their current level in English studies is and in general, what do they think about their English language learning progress. However, students were still able to see that school grades do not reveal one's overall language proficiency, as Jonna, Antti and Kalle all defended Pekka's school grade by saying that he can actually speak English and has managed to communicate in English in gaming situations. If schools moved away from focusing too much on exams and grades, students' answer to question about their English language proficiency might be completely different.

4.2 Affordances of playing *Detroit: Become Human* and other video games – Emotions, reflections and cross-curricular learning

In this subsection, the use of video games in language learning will be discussed and connected with sociocultural and ecological theories as well as game studies presented in the theoretical framework. Students' views on and experiences in the topic will have an important role in the analysis. The

themes that appeared from the research materials are affordances video games can provide, including the reflection on the possibilities video games have offered for student's learning process, the possibilities of using video games such as *Detroit: Become Human* in English classes as well as in cross-curricular learning and multidisciplinary modules. After that, a closer examination on the gaming session including students' reflections and reactions on themes and contents of *Detroit: Become Human* and the emotions they evoked will be presented. All the discussion will be connected with sociocultural and ecological theories as well as studies on video games in language learning.

One central theme that emerged throughout the discussion on video games with students was affordances video games provide for language learning. Based on this gaming session with students as well as inquiries about their previous video games experiences, it became clear that games have indeed enhanced and promoted their English language learning. It appeared that games can enable experiences that would not be possible through more traditional learning materials and methods such as books and revising for exams. Moreover, playing video games was a hobby of all students who participated in this study, as they admitted being enthusiastic gamers. Therefore, for them, gaming can be considered as a meaningful action, which is an important factor in learning process. Closely related to affordances, another theoretical theme that emerged from the interview was the zone of proximal development. To quickly summarise ZPD, according to Lantolf (2000, p. 17), it refers to what learners can achieve and learn alone and what they can accomplish with support from someone else and/or cultural artifacts. In this context, video games can be seen as cultural artifacts. Next up, the affordances of video games as well as their role in the light of ZPD will be discussed from different viewpoints and with help of students' examples.

To start with students' views on the role of games in language learning, it became very clear that all of them considered video games to be an essential tool in language learning. It even seemed that for them, the majority of their English language proficiency has developed while actively playing video games in their free time. That is, Antti stated that he has learnt English mostly by playing games at home. What was even more interesting, Kalle said that his English skills were quite bad up until seventh grade, but when he started playing *Growtopia,* a multiplayer sandbox game where players farm, craft and interact with each other, he learnt English, and that started to positively affect his English grade in school as well. Kalle's example is particularly worth considering further, because by seventh grade, he had been studying English for four years in school and still had not learnt a lot. Playing *Growtopia*, then, was something that he did for himself, probably not with an intention to learn English but to do something interesting and meaningful in his free time. According to Van Lier,

learning occurs when learners carry out activities together or on their own and are autonomous and responsible of their own actions (2004, pp. 7–8). Moreover, language learning and all learning is situated and occurs "in the context of meaningful activity" (Van Lier, 2004, p. 223). That is, students who carry out activities of playing video games at home are autonomous and responsible of their gaming session and actions related to it. Therefore, it can be argued that this kind of environment and meaningful activity has indeed provided students with affordances for learning opportunities.

Moving on to the use of *Detroit: Become Human* in English language learning and the affordances it can provide, both the interview and gaming session offered various insights and viewpoints on the topic. Naturally, the use of video games in language learning in school was a new phenomenon for students, and especially in the beginning of the discussion, the unfamiliarity of using video games in school clearly affected students' views. Various challenges and issues were addressed, and students were sceptical to whether real video games could be integrated into school environment. In addition to that, students thought whether everyone would be interested in playing and whether students would engage in a discussion during the gameplay. It was suggested that games with a chat might work better, and that games should be interactive. The interactivity of *Detroit: Become Human* was understood by students, and Antti described that there is interaction in a way that a player makes choices and has to understand the choice options and how they may affect the game later on. However, in this particular game, the effects of one's choices cannot all be immediately seen, and therefore, it requires more perseverance and commitment than games such as Quizlet that are designed for language learning. Moreover, students viewed that participating in this kind of gaming session requires that students already have an adequate foundation in English language so that they can follow the gameplay, make choices and participate in the discussion. All of these notions were important and accurate, and it became clear that students with a lot of gaming background were able to consider the use of video games in school from various angles.

After the preliminary discussion on the use of games and specifically the use of *Detroit: Become Human* in language learning in school, students were told about the written assignment in the earlier learning experiment and their opinion on that kind of activity was inquired. Here, the response was already much more supportive and enthusiastic than in the earlier discussion. Students could see how a video game as a medium can actually provide much more material for an essay than a made-up written text could, and therefore, it enables students to get more materials and ideas for their writing. That is, the potential of video games and affordances it can provide for written assignments was understood by students, which can be seen in the following interview excerpt.

(4):   Antti: Mää   sanoisin   sen   verran, että   kyllä   mää   sanoisin   että siinä saahaan ainaki huomattavasti enemmän informaatiota ja pystys… Jotenki peli on niin   isompi niinku mediana kun   joku   sähköposti jossa   lukee että   Sallalla   on kauppa. Salla   myy maalia. Mitä   Salla   tekee   vuonna   2038 kun droidit on vallannu universumin? Ennemmin ku tuossa   tilanteessa tuo pelkästään tuo kauppaosio tuossa niin… Siinäki sää pystyt sää pystyt kirjottaa siitä niin paljon enemmän ku sä huomaat siinä niitä ongelmia paljon paremmin.

Translation: *Antti: I would say that, I would say that one gets at least much more information and could... Somehow, a game is much bigger as a medium than an email that says Salla has a store. Salla sells paint. What does Salla do in 2038 when androids have occupied the universe? Rather than the store scene there in that situation... There you can you can also write about it so much more when you notice those problems much better.*

Moreover, in addition to video games clearly offering students affordances for learning, it seemed that they also provide a zone of proximal development. While Colby & Colby (2008, p. 305) suggested that games that are neither too difficult nor too easy but get little by little more difficult can keep players within the zone of proximal development, this study revealed that even if the game task or activity itself is not challenging, it can offer a zone of proximal development, if the game is used for example as a base for other learning activities such as a written assignment. In addition to inquiring students about their opinion on using excerpts from the game *Detroit: Become Human* as a base for essays, they were also asked in general, how they would view playing a part of some game and writing an essay based on it. A response was very positive and supportive, as students viewed that a video game would be more engaging than a text. Furthermore, it was suggested that playing a game would offer students new vocabulary that they could use based on the game context and would not have thought of using otherwise. That, again, is an example of an affordance as well as a zone of proximal development – playing a game offers students new learning possibilities and enables them to use language in a way they could not do without the game context. A part of this discussion can be seen in the following interview excerpt.

(5) Jonna: Joo ja sitte esimerkiksi sitte tossaki tulee niinku esimerkiksi jotain sanastoa

mitä ei välttämättä tajuais ees käyttää, niinku ku tuota kuuntelee vaikka jotain peliä niin se sanoo siihen asiaan littyviä sanoja, mitä ei välttämättä tajuais ite googlettaa vaikka ku tekee sitä esseetä niinku kääntäjällä ja sitte kattoo jotain. Niin niin, vois sit siinä yhteydessä, että hei tuohan on muuten tosi hyvä sana, mitähän se tarkottaa. Ai jaa, se tarkottaa tuota, no sehän sopii tähän mun esseeseen.

Translation: *Jonna: Yeah and for example, for example there's some vocabulary one might not think of using, like, when listening to a game, someone says words related to the subject one might not think of googling while writing the essay with the help of the translator and checking up something. So, so, in that context, one could think that hey, that is an excellent word, what does it mean. Oh, it means that, well, it fits well in my essay.*

That is, even a short excerpt from a video game offers students a lot more than a text, because there are visual and auditory elements in addition to just reading the subtitles, that could be comparable to reading a text. Gee (2005, p. 34) suggested that the meanings of words are situated in the actions, images and dialogues of the game, and it was interesting to see that that was something students could understand as well. This understanding probably stemmed from their own gaming experiences, where they probably have encountered new words and may have been able to guess the meaning of the word based on the game context. Moreover, in a video game, there is the environment with for example different sounds, nature, landscapes, buildings and characters acting, and a player can see and hear them with their own eyes. This experience is also more engaging and authentic, and therefore working on this zone of proximal development may actually push students to try more than they would with a traditional essay material. The gaming experience can then be connected with students' own life, and as Kirriemuir (2003, p. 1154) stated, by playing video games, students practice and implement their knowledge in virtual simulations that imitate real life situations that happen in students' own world. Thus, in playing video games and encountering new words as well as more broadly, new virtual simulations and situations, students work on a zone of proximal development, in which playing a game offers them learning possibilities and outcomes that could not be reached without the game.

Another topic closely related to affordances the game *Detroit: Become Human* can offer was the discussion on multidisciplinary modules in education, which refer to cross-curricular learning situations in which two or more school subjects are combined in teaching in school. Multidisciplinary modules can for example be classes or different kinds of school projects. Thus, after the discussion

on how *Detroit: Become Human* could be used in English classes, the topic was developed further by considering how it could be used in those multidisciplinary modules that are favoured by the contemporary curriculum. Based on the gaming session, students found themes and phenomena from the game that actually could be worth discussing when studying other subjects as well. The subject that was first suggested for combining the game and English language learning was social studies. That is, the game presents several social issues such as unemployment, inequality and challenges of modern technology and moral considerations related to that, and those are some of the themes discussed in social studies classes. Therefore, the above-mentioned topics could provide materials and possibilities for example for different projects and discussions.

Other subjects that were suggested for multidisciplinary modules were philosophy, ethics, and psychology. How those kinds of multidisciplinary modules could be implemented was not discussed in more detail with students, but I will present some of the thoughts and themes that appeared from the research materials in general and that could be connected to these subjects as well. That is, considering the artificial intelligence and its role in our society in relation to philosophy would most likely evoke thoughts and opinions among students and could lead to new learning opportunities and ideas. In ethics, reflections on the rights of human-looking androids in the game and how humans treat them could be something worth thinking. Finally, from the point of view of psychology, players' and humans' emotions and attitudes towards androids and issues in the game could be considered and their effect on human behaviour could be examined and discussed. All in all, playing *Detroit: Become Human* and studying themes, issues and phenomena presented in the game through multidisciplinary modules could provide students with new insights and learning possibilities and outcomes, because while playing, the active player can see in action how those phenomena and issues occur in the game world. That is, they can experience the events more authentically than through reading a textbook chapter or watching a video where there is no active involvement in the part of a student.

In addition to considering how the game can be used for studying individual subjects, from sociocultural and ecological view, it is essential to consider broader topics and areas that connect different subjects together and encourage students to work in diverse communities. As discussed in 2.2, the national core curriculum introduces areas of transversal competence that refer to the whole of knowledge, skills, values, attitudes and will as well as using the knowledge and skills appropriately in different situations (POPS, 2014, p. 20). Game studies also present areas of transversal competence that can be studied through playing video games. For example, Beavis (2014, p. 435) suggested that video games can be considered as a tool to learn multiliteracy, because they have a special way of

telling stories and they challenge players to take an active role in completing the game tasks and storylines. During the gaming session, students who played two chapters of *Detroit: Become Human* actively worked together interpreting a text, a video game, that involved verbal, visual and auditory elements. Moreover, the game environment and session applied modern technology, and one area of transversal competence is indeed skills in the fields of information and communication technology (POPS, 2014, p. 23). To be able to play, students needed to understand how playing on a PS4 console worked including the use of the controller and actions players are able to take within the game environment. Students are guided to use modern technology in an investigative, interactive and creative way (POPS, 2013, p. 23), and that occurs when students play video games such as *Detroit: Become Human*.

Another topic that appeared in the discussion with students was the importance of students' own active participation in playing *Detroit: Become Human*. The preliminary worry we had regarding the game chapters were that they were not filled with action scenes and dangers, but it appeared that students still considered the chapters and the story that was presented in those two chapters to have been interesting. It was suggested that it is more interesting to actually play than just listen to the textbook chapter, because when playing, students themselves get to take an active role. That is, it is different to hear someone do something in a book or a textbook chapter than to be actually able to act in a game and see and contribute to everything that happens in a gaming environment. Jonna's example on this greatly highlighted the importance of students' participation and involvement, and her example referred to students noticing and turning on two android birds in the house.

> (6) Jonna: Joo ja siis se on ehkä mielenkiintosempi ku jos kuunnellaan joku kirjan kappale, että siinä niinku justiinsa se, niinku jos tää ois selitetty että "Markus kävelee huoneeseen. Hänen pitää mennä yläkertaan hoitamaan vanhaa ukkelia." Mutta niinku tuossaki ois silleen jaa täällä on lintuja, katotaanpa lintuja ja sitte että jaa se laittaa ne päälle, silleen siis öö okei.
>
> Translation: *Jonna: Yeah, and it's probably more interesting than listening to a textbook chapter, because there's this, like, if this was explained that "Markus walks to the room. He must go upstairs to take care of an old man." But then, there was like oh, there's birds over here, let's take a look at them, and then oh, he turns on the birds, well uh okay.*

Furthermore, students were inquired about how or whether their experience of these chapters would have differed if they had watched a playthrough or a movie about a similar kind of topic. Again, it became clear that watching someone else play or watching a movie would not have felt as engaging and meaningful for students as being able to play themselves. In the game, there was an option to observe different discussions and actions and there was a lot for the player to do and explore, and students were actually able to spend as much time as they liked looking at something or listening to somebody in the game. Antti stated that he would actually be annoyed if he watched a playthrough and the player would not observe and inspect everything that he would be interested in checking and examining. That is, watching someone else play prevents the audience from acting and making decisions, which is an important part of a learning process. Other students agreed with Antti and implied that it would be frustrating to watch a player walk straight past something even if a person watching the playthrough wanted to go somewhere to for example check what is behind the corner. Related to that, students were inquired about whether they think interaction and their own decisions affect motivation, and Antti's answer to the question was pretty straightforward, as can be seen from the following interview excerpt.

(7): Antti: No siis tottakai se vaikuttaa koska siitähän sä saat sitä dopamiinia ku oot silleen hei tuolla on mielenkiintonen juttu, mää käyn tuolla kulman takana. Ja sitte se voi vaikka paljastaa jonku uuden story branchin, siellä on vaikka just joku koditon ihminen jota droidit vaikka auttais ja sää meet puhumaan sinne. Mä en siis oo pelannu tätä peliä, mutta mä voisin kuvitella että se ois ihan mahdollista siellä, ja sää pystyt tekeen niitä valintoja, sää siinä niinku opit kanssa siitä pelistä asioita. Nii totta kai se nyt on niinku, nii. Totta kai se aktivoi [pelaajaa].

Translation: *Antti: Well, of course it affects because you get dopamine from when you are like hey there's something interesting, I'm gonna go look around the corner. And then that might reveal a new story branch, if there's for example a homeless person who is being helped by androids and then you could go talk with them. I haven't played this game, but I could imagine that could be possible there, and you can make decisions, and that way you learn about the game. So, of course it is, yeah. Of course, it activates [the player].*

The discussion and students' examples presented above are clear cases of affordances that offered learning possibilities for students while playing *Detroit: Become Human.* Van Lier (2004, p. 94)

suggested that affordances arise when learners are active and establish relationships with and within the environment, and learning opportunities occur when learners actively participate in an activity using these affordances. When students played two chapters of the game, they had an active role in affecting the course of the game, as they were able to move the character Markus and make him look at different things as well as make some decisions. That is, Van Lier (2004, p. 19) also argued that language learning is an activity and not object, as it is in the world and not something that happens only inside a learner's head. Playing the game was a shared activity between students and us instructors, and therefore, it offered more learning possibilities than for example watching a game tutorial or playthrough alone at home could have offered. Furthermore, the national core curriculum suggests that students' own interests, working methods, feelings, experiences and views of themselves as learners guide the learning process and motivation (POPS, 2014, p. 17), and as video games are interests of many students, they can indeed motivate and encourage students to learn also in school environments. Students' examples in this section have proved that using video games as a text for essay writing, for instance, would be more motivating and engaging than traditional texts.

Related to students' own active participation in the gaming situation, an important notion was the immersion in the game world. When students play the game, they can feel that they are actually there in the game world, and that may enable them to realise and understand different phenomena and topics better. For example, students who play *Detroit: Become Human* may actually feel that they are a part of the phenomenon of unemployment as a result of modern technology as they can see and hear poor citizens begging for money on streets and organising demonstrations. That, for them, could put things in a new perspective, as they can experience these things through the gaming session. It was suggested that watching a playthrough of the game would break this immersion in the game world, as a person watching the playthrough could not affect the course of the gameplay. Moreover, when a learner gets to play the game and is able to observe and investigate the surroundings, they can discover things themselves. That prompts the player to reflect on what is actually going on in the game. For example, Jonna mentioned having noticed different buses compared to ones they know and advertisements about "getting your own android today" that was compared to human trafficking.

The reflections and discoveries presented above show that playing a game such as *Detroit: become Human* can encourage students to actually develop and broaden their thinking, which, again, is an important aspect of learning and one of the areas of transversal competence. That is, the national core curriculum states that the skills of thinking and learning to learn form a basis for the development of other competences as well as lifelong learning (POPS, 2014, p. 20). The environments in games often

differ from players' own worlds, which is why they can offer these new insights and understandings of different topics. An example of this kind of reflection and broadened thinking can be seen in the following interview excerpt.

> (8): Antti: Joku saattais alkaa sanomaan, että mutta eihän tuo [androidien kauppa] vois olla niinku yhteiskuntaopin tunnilla mitenkään oikein, että siellähän ollaan jossain tulevaisuudessa, dystooppisessa tulevaisuudessa, jossa, joka ei mitenkään niinku toimis, niinku vaikka Suomessa. Jos me opiskellaan Suomen yhteiskuntaoppia, niinkun ite aineena, niin siinähän tulis justiinsa se, että hetkonen, eihän tämä asia ole Suomessa näin. Mutta se vois olla jos olisi tapahtunut jotakin.

> Translation: *Antti: Someone might say that that [android market] could not be appropriate for social studies class, because they are somewhere in the future, in the dystopian future that could not be possible at all for example in Finland. If we study Finnish social sciences as a subject, that is where it could be noticed that hey, things are not like this in Finland. But they could be if something had happened.*

Thus, after the gaming session, Antti was able to reflect on how this topic could be discussed in the social studies class. He was able to think of arguments for how the scenario presented in the game could not happen in Finland and that it is not similar to our contemporary society. However, his understanding of the phenomenon had developed as he suggested that the scenario of androids working alongside humans could be the reality if something had happened differently in the past. Therefore, the gaming session was an excellent affordance for students by providing them learning outcomes such as developing their understanding of how the Finnish society could be different to what it is today. Moreover, it offered students a zone of proximal development, that is, playing the game and the interview discussion guided them to consider learning possibilities and alternative societies that they perhaps would not have thought of if they had not participated in the learning experiment. I would guess that these kinds of notions and findings from the game would lead to excellent discussions between students and teachers in classes and would enable different kinds of study projects and activities.

This subsection this far has mostly focused on considering the learning possibilities and outcomes playing video games can provide for students in English classes, multidisciplinary modules as well as in free time. Earlier in this subsection, students' preliminary criticism towards using video games

in school was addressed, and after having discussed and presented various possibilities and benefits of applying videogames to school environment, it is important to again consider some challenges. Applying English content such as video games into other subjects such as social sciences was partly seen as a challenge due to students' varying English proficiency. For students, whose English language proficiency is limited, understanding the course of the gameplay might be difficult and prohibit them from learning due to the language barrier. This kind of combination of different subjects was viewed as a challenge particularly if it was implemented suddenly, that is, without any previous experience on the topic. It was suggested that if these kinds of multidisciplinary modules and applying video games to them happened already at an early stage, that is, when students were young, they could get used to it and their learning and thinking process might go in a different direction. Furthermore, students acknowledged challenges a teacher would face when planning for applications of video games in teaching. That is, planning a study session, module or course that would be based on a video game would be much more challenging than using more traditional and familiar methods such as books, articles or even videos would be. It might also be somewhat difficult to fit a whole course into a curriculum, and therefore, the best way would most likely be to start with small steps such as playing a video game and doing an activity related to it during one class.

Next up, a closer examination on the gaming session with students will be presented focusing on the central themes and phenomena that appeared from that data. These themes are students' observations of the game and its events, reactions and emotions they evoked and their importance in the overall learning process and finally, reflections on the issues presented in the game and comparing them to students' own world. The goal of this kind of closer examination on the gaming session is acquiring a wider understanding of the possibilities and benefits of playing games, in this case *Detroit: Become Human*, in class with an aim to promote students' learning in a meaningful way. The connections between the themes that appeared and learning theories and video game studies will also be presented to understand in detail what kinds of affordances these kinds of gaming situations can provide for students and teachers.

One important finding from the gaming session with students was that they actively observed the surroundings and events in the game and talked about what they were seeing and feeling during the gameplay. Considering students' reactions and feelings is important, as it affects their learning process and understanding of topics and themes, and therefore, their reactions and feelings during the gameplay will now be discussed. That is, in addition to commenting cutscenes and events that occurred in the game, it was interesting to see how students actively looked for details and extra

activities to pay attention to, which in many cases evoked discussion and reflection. For example, students actively payed attention to unordinary art in Carl's house such as a stuffed giraffe in one corner and a dead skeleton hanging in the air. Those notions then led to humorous comments and even some inside jokes and references. Another example of students' attention to details in the game was when Carl's son attacked Markus android and students noticed that his processing light blinked and changed colour several times. Earlier in this subsection, students' notions on immersion in the game world were discussed, as they thought that playing a game makes them feel like they are actually there in the game world. An examination and above presented examples on students' reactions and observations in the game suggest that they were indeed immersed in the world of *Detroit: Become Human* – they observed the environment as if they were in the house or in the city themselves and seeing different kinds of objects or events evoked reactions in them.

In addition to students' reactions in the game surroundings and discussions based on what they spotted in the environment, their close observation on everything also seemed to stir various emotions. For example, one student spotted a surveillance drone flying in the air, and that led to a discussion about students' feelings about that kind of surveillance and they considered it to be both cool and creepy. Moreover, the fact that Markus gave Carl a weather report right after he woke up and administered Carl's medicine was something that students viewed with caution and they stated that they would be a bit afraid of that kind of scenario. That is, playing in a dystopian future seemed to make students a bit cautious when they compared the game events to their own world. However, there was also a lot of positivity, laughter and humour during the gaming session, which resulted in the overall atmosphere being very relaxed and easy. The game situations and environment encouraged students to make humorous comments, do funny things when controlling the character as well as making references to memes and inside jokes that were not even understood by us tutors. For example, when students found android birds, they joked about turning on their bird and then asking Google to turn them off. Controlling Markus to walk in circles when asked to do some tasks was also something students considered funny, as they repeated the action several times. An interesting notion was also students realising that the game scene where Carl saw Markus's finished painting and said in astonishment "oh my god" had been made turned into a meme, that is, an amusing or interesting item such as a picture that spreads widely online (Merriam-Webster, n.d.). This notion led to amusement and laughter among students, as they were able to connect the game with their previous experiences in their own world.

Furthermore, the game events partly surprised students and partly disappointed them. The fact that the painting Carl was working on actually changed instead of him just moving his hands was something that positively surprised students. Another positive surprise was when Markus's painting required interaction in part of the students, as they had to decide what they wanted to paint, and they had to use the controller to make the painting. Then, some surprising events in the game made students feel a bit contradicted. For example, in a painting store, transaction process happened so that Markus connected himself to the computer to pay, and that was something that both amused and confused students leading to a discussion on how that kind of interaction between androids should occur and whether it is necessary for them to speak as they did in the scene. As for disappointments, it became clear that students who had a lot of previous experience on gaming would have expected even more possibilities for interaction within the game. For example, in the beginning of the first chapter, students encountered a homeless person, and Jonna would have liked to give him some coins, but the game did not allow the player to do that. Moreover, when waiting for Carl to eat breakfast in his house, the player was supposed to find something to do in the game. Students decided to play chess and wondered whether it was a minigame meaning that students would have been able to actually play chess. It appeared that playing chess was not a real minigame, and even though they chuckled at the notion, it seemed that not being able to play disappointed them a bit. That is, only choosing whether a player wished to win, lose or draw did not offer similar interaction as a real minigame would have offered.

In the last two paragraphs, various examples on emotions as a result of students' observations have been presented. The examination of these emotions was important, because students' emotions and how they view and feel about topics and phenomena being learnt affects their learning process. One area of transversal competence presented in the national core curriculum is skills of thinking and learning to learn (POPS, 2014, p. 20). That is, how students view themselves as learners and how they interact with the environment guides the development of those skills (POPS, 2014, p. 20). Moreover, it is important to examine how learners learn to observe, search, evaluate, produce and share knowledge and skills (POPS, 2014, p. 20). This area of transversal competence is closely related to students' observations of the environment and feelings those observations evoked – their interaction and reactions to the game environment guided their learning process as they led students to discuss the game situations based on their emotions, as can be seen from the above-presented examples. That is, students' views on various topics and issues presented in the game affected their interaction within the game environment and with other students.

Furthermore, as Colby and Colby (2008, p. 301) suggested, students learn to critically think about what they can learn by participating in these kinds of gaming situations. After the gaming session, students were inquired about what and how they can learn when playing video games in school, and that led to a discussion about the possibilities and affordances of playing video games in school, as has been discussed earlier in this section. As these kinds of alternative learning settings are something students are not used to, they are encouraged and guided to actually think about what those learning settings can offer them, and that helps them develop their skills of thinking and learning to learn. The interview with students proved that their understanding of the affordances of video games in learning broadened, as they understood for example that a game-play experience offers an authentic experience that cannot be achieved by reading a text. Therefore, it can be argued that playing *Detroit: Become Human* increased students' skills of thinking and learning to learn.

In the discussion of students' observations and emotions, some notions on thoughts and reflections encouraged by the gaming session and game events have been already mentioned, and the topic will now be discussed in more detail. It was interesting to notice how students reflected on and discussed various topics and themes in the game such as artificial intelligence, inequality and modern technology. They were able to consider these issues from various viewpoints and they also compared them to their own world, views and experiences. Even though the game was set in the future, the themes and phenomena it presented could easily be connected with today's world, which could be seen in the discussion between students. As Kirriemuir (2003, p. 1151) suggested, the goal of game-based learning is that players interpret and construct knowledge and apply in the virtual world according to their own experiences and knowledge. When students played *Detroit: Become Human*, they interpreted the game events based on their current understanding of the world and different issues and even considered some future or alternative scenarios encouraged by the game.

One central theme presented in the game is inequality between humans and androids, and that was also one of the topics students reflected on. One of the cut scenes in the first chapter presented a demonstration against androids by the unemployed, and they also attacked Markus android. Students were inquired about whether they think aggressive and violent reactions of the unemployed were justified. Antti's answer was interesting and suggested that there are no easy answers and solutions to these kinds of issues.

> (9) Antti: Where people see inequality, there's always like aggression there as well. It's
> kind of a natural thing to say that of course it's not justified.

That is, Antti was able to understand that the fact that androids have taken people's jobs makes the unemployed feel inequal to androids and people who still work, and that causes aggression and violent behaviour. He could understand the reason for the demonstration and for why androids blamed Markus, called him names and hit him. Antti seemed to suggest that it is easy and natural to say that violence and aggression is not justified, but that there is a deeper issue, in this case unemployment, that needs to be solved within the society. Therefore, I think that this short comment showed a deep reflection and understanding of the issue from different points of view.

Another example on the discussion on inequality was when students reflected on the relationship between human Carl and android Markus and considered them to be friends. They also reflected on Carl's attitude towards Markus by stating that he seemed to be really empathic and that he was also dependent on Markus. Jonna suggested that therefore Carl had to be nice to Markus but based on the demonstration and other reactions of humans students had seen before, Antti and Kalle argued that he did not need to be nice and that he could even be a slaver. This interaction between students showed how their shared understanding of the topic developed, as they realised that the relationships between Carl and Markus could be completely different if Carl treated Markus like a slave. Beavis (2014, p. 435) suggested that video game players need to interpret different kinds of symbol systems, words, pictures, sounds, and symbols provided by complex and sophisticated game worlds, that is, they need to understand the above-mentioned diverse forms and relationships between them. In other words, students' interpretation of the game world and its events such as the examples presented above are cases of meaning-making, as students' knowledge of the issue developed as a result of interaction with others.

Another theme students reflected on was modern technology such as the possibilities of artificial intelligence and whether our future could be similar to the game world. Moreover, comparisons between the game world and the world students live in were made. Ostenson (2013, p. 72) suggested that when studying different kinds of narratives, English language learners learn to interpret meanings from various stories through reflecting topics such as what it means to be human and care about other people and how emotions work. During the gaming session, students indeed interpreted meanings within the game world and that led to excellent discussions and reflections. Some examples on them will now be presented.

Earlier, a discussion on students spotting surveillance drones was presented, and related to that scene, they were inquired about whether they think that that kind of future involving police drones monitoring citizens could happen. Kalle said that it could be possible, but he still thought that it is unlikely to happen. Antti said that he doesn't believe this kind of society could be possible in Finland, but he could see some of these things happening for example in China. Students' answers were based on their contemporary understanding of the world, as could be seen in Antti's answer, as he was clearly aware of the differences between the Chinese and Finnish societies. I believe that reflecting on this kind of topic that is quite unusual and something students do not encounter in their everyday studies pushed them to develop their thinking as they were asked to consider whether the game world could be their future as well. The discussion on the topic was quite short, but more extensive reflection could offer students a broadened understanding of different future scenarios and the impact their actions have on it.

Another example on modern technology and the differences between the game world and real world occurred when android Markus took care of Carl. Students were inquired about how that kind of elderly care is different to what it is nowadays, and they were able to pinpoint differences between contemporary elderly care and elderly care by androids. Moreover, they could even see possibilities of elderly care by androids compared to contemporary elderly care, as can be seen in the following interview excerpt.

> (10) Jonna: There's someone there to help all the time.
> Antti: Yeah, and you know... how could I say it? There's like, nowadays I don't think there's enough people you know... there's like not enough people to take like... how can I explain it? There's not enough people to take care of our elderly, so basically, this is better.

So, students acknowledged that elderly care by androids enables the elderly to have someone to take care of them all the time. This is not possible in today's world, as there are not enough nurses and caretakers to assign one nurse or caretaker to take care of one old person full time. The discussion between Jonna and Antti was again an example of students constructing and interpreting knowledge and applying it in the virtual world according to their own knowledge and experiences (Kirriemuir, 2003, p. 1151), as they discussed the differences between today's elderly care and elderly care in the game. Again, this topic could be explored further by considering other issues in the elderly care system, for example the fact that financing also has a key position in it. Playing in the game world

where students get to have an active role in being a caretaker can offer them possibilities to consider the nature of elderly care from new viewpoints. That is, without the game play experience, they might not have suggested that it is a good idea to have someone around the elderly all the time. Therefore, it can be argued that playing *Detroit: Become Human*, a video game that presents simulations of experiences and new worlds (Gee, 2004, p. 4), indeed offers unique affordances for students.

The final central theme that appeared from the gaming session data was students' reflection on androids and their identifying with them as a result of playing as an android. Gee (2005, pp. 34–36) suggested that some learning principles that can be discovered from video games are identity, interaction, agency, customisation and situated meanings. That is, during the gameplay, players either inherit a strong and appealing character or build a character from the beginning, and this way, they get to identify with the character they play (Gee, 2005, p. 34). This phenomenon of identifying with the game character could be seen in students' actions and reflections during the gameplay, and changes in their attitude towards the androids could be seen even in the short period of playing the game. For example, during the demonstration cutscene where Markus was attacked, students were inquired about whether they feel anything for Markus as he was attacked and fell down. Students' first thoughts were quite hesitant, as Kalle stated that Markus is just a robot and they noticed that the police officer who interrupted the scene had no emotional reaction to demonstrators' actions. After the scene was over and Markus was on the way home, students were inquired about if they think the fact that they are playing as an android affects their feelings and if they feel for example empathy towards the android character they are in the game. This time students' answers were more straightforward – it was clear for them that being an android in the game affected their feelings. Moreover, students stated that the situation would be different if they were playing as someone who had an android or who had lost their job.

Related to students' feelings about androids, students reflected on how the fact that androids in the game look like humans affect their feelings and emotions. Antti brought up the question why the androids in the game are so lifelike, and his own opinion was that there is no actual reason for them to look that much like humans. Jonna stated that one actually feels something for androids as they look like humans. Antti compared this to teddy bears and argued that one will have an affection to them because they are cute and also that one is going to like something that is lifelike. Students' somewhat humorous suggestion to this confusing issue was that if the society decides to start android production, they should be made ugly so that people do not feel anything for them. Based on this notion, it became clear that students had conflicting emotions towards lifelike androids in the game,

and it seemed that they were surprised to notice that they actually felt something for the androids in the game world. Their understanding that the appearance has a significant effect on emotions was interesting and important, and proved again that playing *Detroit: Become Human* in interaction with other students provided them with possibilities to practice their meaning-making skills as their shared understanding of the phenomenon developed through the discussion presented above. Furthermore, the discussion based on the game offered them a possibility to practice their skills in the field of thinking and learning to learn, as they were led to consider the relationship between appearance and emotions.

Finally, after the gaming session, students' final thoughts on the game chapters were gathered, and they considered the meaning of the themes presented in the game and reflected on what the game designers wanted players to think and consider while playing. The final reflection was very fruitful, and it was amazing to notice that students were able to consider the game contents from a wider perspective and connect it to their own world and own thinking, as can be seen from the following interview excerpt.

> (11) Kalle: What would we think about the androids? What would we do for them?
> Antti: Yeah, and if we would get affection on some android like Markus, like Markus is likeable. As an android of course, so what would happen if we would start to care about the android, even if it's a machine? Still. Because it feels like it has emotions. And it has like actual thoughts and stuff like that. So, I don't know. Maybe just experimenting in the field of what would happen if we would make human-like robots and people would start using them as people, so to say.

The interview excerpt above as well as the whole discussion on students' observations, emotions and reflections shows the results of students' thinking process during and after the interactive gaming session and proves that playing the game indeed offered students learning opportunities. That is, they were led to consider different phenomena from various perspectives, compare the game world to their own world and experiences as well as consider their own emotions and feelings towards the game and the reasons behind them. Moreover, participating in this kind of activity encourages students to work in the zone of proximal development, as the game environment guides them to consider and reflect on issues they may not encounter in their everyday life. Therefore, it can be argued that playing *Detroit: Become Human* interactively with other students in school is a fruitful and unique affordance

that promotes students' learning process, and thus, conducting these kinds of learning activities in class can be recommended.

5 Discussion and conclusion

The goal of this master's thesis was to examine how contemporary sociocultural and ecological learning theories support the use of video games in language learning and teaching and how students themselves view language learning and the role of video games in their learning process. Furthermore, this thesis also aimed at studying how video games and in this particular study, video game *Detroit: Become Human*, can promote students' learning process, and more specifically, what kinds of affordances playing video games such as *Detroit: Become Human* can offer to learners who participate in this kind of action. In this section, the main findings of this study will be discussed and summarised followed by the reflection on the strengths of the study as well as consideration on what could have been done differently and how this topic could be studied further in the future.

Theoretical framework of this study examined the use of video games in language learning from the point of view of sociocultural and ecological learning theories, and it appeared that the nature of video games makes them suitable to be used in language learning. That is, video games often provide students with a zone of proximal development by introducing quite challenging game tasks and unfamiliar environments, which promotes their learning process. Playing video games requires interaction and agency in part of the player, as students communicate and act within the game world and with other students/players. These notions are considered essential in language learning and learning in general. This interactive environment can also motivate students and encourage them to reflect on what they are learning by playing. Furthermore, video games are simulations of experiences and new worlds providing players with unique affordances, so that they can together and with the help of the game make meanings and connections and comparisons to their own world while being engaged in a meaningful activity. In video games, meanings are situated in the actions, images and dialogues of the game, and therefore, participating in the game environment can be considered as a way of learning. Finally, playing video games involves practicing areas of transversal competence such as multiliteracy, thinking and learning to learn and competence in the fields of information and communication technology.

The analysis of the learning experiment data including the interview and gaming session revealed that students' views on language learning steered away from still prevalent textbook and theory-oriented approach and instead focused on more motivating and modern learning methods. It appeared that the majority of students' English language proficiency had actually developed from playing

games in their free time. Thus, students highlighted the importance of meaningful learning and personal motivation in their learning process stating that learning occurs when students actually have the need to learn something new. These findings also explain why students considered free time language learning to be more meaningful than language learning in classes. Moreover, students criticised the contemporary language education in Finland from mainly focusing on theory and textbook-oriented learning, in which flawlessness of language and correcting mistakes has seemed to be more important than encouraging students to actually communicate and use language in class. These views were then connected with the possibility of using video games in learning, and students could clearly see the connection between language learning and playing video games, although some challenges of applying video games to school environment such as time management and diversity of students' skill levels were also considered.

A closer examination on affordances of video games revealed that playing games can offer various learning outcomes. For example, games involving visual and auditory elements as well as often unfamiliar worlds and environments can provide a zone of proximal development enabling learning outcomes that might not be reached through more traditional learning platforms. That is, students themselves viewed video games as a more engaging medium than texts, and it was noted that game environment can offer vocabulary and insights students could not have thought of otherwise. Furthermore, video games and especially game *Detroit: Become Human* in this study presented themes and phenomena such as unemployment and inequality that can be applied to classes other than English as well. Thus, video games can offer cross-curricular learning involving areas of transversal competence such as multiliteracy and thinking and learning to learn. Another important finding was that playing the game also required active participation in the part of students, as they were able to observe the environment including various scenes and discussions as well as make some choices themselves. This led to students being immersed in the game world, which could be seen from their close observation on everything that happened in the game. Active participation and immersion in the game evoked various emotions within students and encouraged them to reflect on the game themes and compare them to their own world and beliefs. That is, students discussed topics such as artificial intelligence and modern technology from different viewpoints and compared the game phenomena such as the nature of elderly care to elderly care in their own world. This kind of interpretation and reflection is important in the overall learning process, as it helps learners shape what they are learning to suit their own beliefs and values.

 I believe that the results of this study are relevant, as they are based on careful background research on contemporary learning theories and views of National Core Curriculum as well as game studies. However, it is also important to acknowledge the fact that the data for the analysis was gathered from one study session involving a small group, that is, four students, who all were enthusiastic gamers. This most likely affected the positive outcome of the learning experiment and the analysis, as students' response and the overall course of the gaming session and interview was supportive towards the use of video games in learning. If students had never played video games or their English proficiency had been lower, the response to this kind of learning experiment might have been completely different. Still, the results of this study were somewhat similar to earlier studies on the use of video games in learning, as they have also noted the positive impact of applying video games to education. Therefore, the results of this study line with the previous research in the field.

As this study was based on an earlier pedagogical study, appropriate changes were made along the process to make this second-stage learning experiment more functional. Therefore, the study process that started one and half a year ago enabled fine-tuning of this learning experiment so that students were able to get a more extensive insight into the game and take a more active role when playing in a small group, in which they were encouraged to discuss the game events and reflect on what was going on in English with the help of guiding questions provided by us tutors. Thus, perseverance and various phases in the research process could be considered as the main strength of this study. As for considering what could have been done differently, it could have been beneficial to interview English teachers, so that a more extensive understanding on the topic could have been reached. Also, as mentioned in the paragraph above, students' gaming backgrounds were quite similar, as all of them were enthusiastic gamers, and therefore, it might have been useful to include participants who did not have a lot of gaming background. That might also have provided a more diverse picture of the possibilities of using video games in learning.

As for considering the future and how this topic could be researched further, the next step could be conducting a study session in which students would play a part of a video game, which would then be a base for some kind of an activity such as a group assignment, a written assignment or a cross-curricular learning project. That could also be a part of the course plan and evaluation. Conducting this kind of study session would provide a researcher or teacher with an understanding on and new insights into how implementing video games into a classroom works in practice and how students react to it. All in all, the results of this study can be beneficial for contemporary and future teachers of English as the topic is relevant and video games can be applied to actual English classes. Thus,

based on these results, future research in the field as well as English language teaching can be developed further by modifying the setting of this study to suit different goals of researchers and teachers. There still are a lot of questions in the field of applying modern technology and video games to language learning and teaching in a meaningful and motivating way, but I believe that the topic will become more familiar for researchers, teachers and students over the time.

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